Supporting assessment and feedback practice with technology: from tinkering to transformation

Final synthesis report for the Jisc Assessment and Feedback programme by Dr Gill Ferrell

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1. EXECUTIVE SUMMARY

The Jisc Assessment and Feedback programme (Sept 2011-Aug 2014) has worked with 40 higher education providers seeking to review and enhance their assessment and feedback practice through the appropriate use of technology. The projects have worked directly with over 2,200 staff and more than 6000 students covering all of the main academic disciplines and the outcomes of their work have directly impacted a far greater number (estimated at well in excess of 40,000 students).

Key Findings:

- Institution-wide and/or programme-level reviews of assessment and feedback practice should feed into an ongoing dialogue about the educational aspirations, goals and values underpinning good assessment and feedback and defining a set of 'principles' is a good way of formalising and articulating this.
- Learning design needs to take account of the fact that the same underlying principle can be implemented in ways that range across a continuum from being teacher-centric to learning-centric.
- Whilst difficulties in attributing specific outcomes to particular technology interventions are inevitable, there is compelling evidence that the use of technology can support the implementation of educational principles and enhance learning.
- Curriculum design needs to ensure sufficient opportunities for formative assessment, a timetable that permits feedback to be acted on and feed forward into the next assignment and progress monitoring on action on feedback and student learning from this.
- Assessment design needs to reflect the skills, behaviours and competences that enhance student employability in an increasingly digital age including the ability to make judgements about different sources of feedback and to act as producers as well as receivers of feedback.
- Over-assessment and assessment bunching have a negative impact on student attainment.
- Analysis and discussion of approaches to feedback needs to become normal practice for academic staff.
- Students’ longitudinal development benefits from a course/programme level approach to, and overview of, feedback and technology solutions are needed to facilitate the storage and sharing of this information.
- Students at all levels need better support and development to enable them to engage effectively with assessment and feedback practice.
- A range of social factors, including emotion, impact upon how messages are received and acted upon: this needs to be borne in mind in designing approaches to feedback that use technology to support dialogue.
- Students need to be made aware of the benefits of engaging with assessment and feedback practice and developing their own evaluative capabilities in terms of improving their personal employability.
- Institutions have seen considerable benefit from involving learners as partners in enhancing assessment and feedback practice (especially involving the use of technology): students make effective researchers and can offer valuable insights.
- Developing learner confidence and better course organisation are the key elements impacting student satisfaction.
- End-to-end electronic assessment management is not easy to achieve but, for possibly the first time, the technical capabilities exist if institutions can design and implement appropriate business processes.
There is a compelling case for e-submission in terms of improving efficiency and meeting student expectations.

Online marking has reached a level of maturity whereby the evidence for its effectiveness and efficiency may soon result in a critical mass of institutions and academics adopting the practice.

Electronic assessment management is a pre-requisite for capturing and analysing the data needed to enhance learning through effective use of learning analytics.

The programme has many lessons to share in managing and embedding change in relation to assessment and feedback practice and these are being incorporated into an update to the Change Management infoKit.

Key Resources:

- University of Hertfordshire staff guidance on how to implement assessment for learning principles.
- Manchester Metropolitan University guidance on assessment design.
- University of Hertfordshire assessment timelines modelling tool.
- University of Exeter model of dimensions of work-integrated assessment.
- Institute of Education feedback profiling tool and guidelines.
- University of Dundee feedback coding framework
- Manchester Metropolitan University feedback resources for academic staff.
- University of Hertfordshire assessment resource calculator.
- Bath Spa/Winchester video excerpts from a conference on assessment and feedback run by Student Fellows for lecturers.
- The Open University screen casts of students giving feedback on feedback.
- Kingston University Uniqurate user-friendly assessment authoring tool.
- University of Huddersfield report on electronic assessment management.
- Queen's University, Belfast literature review of pedagogic literature on assessment and feedback.
2. **INTRODUCTION**

Assessment and feedback lies at the heart of the learning experience, and forms a significant part of both academic and administrative workload. Right across the UK however it appears that students are less satisfied with assessment and feedback than with any other aspect of the higher education experience. The [Jisc Assessment and Feedback programme](https://www.jisc.ac.uk) (Sept 2011-Aug 2014) supported institutions looking to make changes in assessment and feedback practice, supported by technology, with the aim of enhancing the learning and teaching process and delivering efficiencies and quality improvements.

The programme took place in an overall strategic context whereby most providers of higher education are seeking to enhance their approaches to assessment and feedback to better meet learner needs and expectations and are having to do so in the face of increasing resource constraints. Senior managers are demanding a focus on being student-centred organisations and are expecting to see their achievements reflected in success in recruitment in an increasingly competitive environment and in improvements in measures of student satisfaction such as the NSS. In wanting to achieve this at the same time as delivering efficiency savings, they are looking to the balance of summative versus formative assessment, the nature of face to face contact between staff and students and also the place of online technologies in what have traditionally been predominantly face to face teaching institutions. This represents an opportunity to implement a, much vaunted but little evidenced, paradigm shift for teaching and learning, away from tutor led classroom events to genuinely student centred learning where the individual bears as much responsibility as the tutor for developing knowledge, understanding and skills.

The programme consisted of 20 projects of varying scope and scale from those implementing institution-wide change to smaller scale evaluations of specific technologies. The institutions whose project work has contributed to this summary are:

- Bath Spa University partnered by the University of Winchester ([FASTECH](https://www.bathspa.ac.uk)) project
- Cornwall College partnered by Hull College ([FAST](https://www.cornwallcollege.ac.uk)) project
- University of Dundee ([InterAct](https://www.dundee.ac.uk)) and [EFFECT](https://www.dundee.ac.uk) projects
- University of Edinburgh ([SG4C](https://www.ed.ac.uk)) project
- University of Exeter ([Collaborate](https://www.exeter.ac.uk)) and [OCME](https://www.exeter.ac.uk) projects
- University of Glamorgan ([Assessment Diaries and Grademark](https://www.glamorgan.ac.uk)) project - now the University of South Wales)
- University of Glasgow ([QTI Delivery Integration](https://www.gla.ac.uk)) project
- University of Hertfordshire (Herts - [iTeam](https://www.herts.ac.uk) and [EEVS](https://www.herts.ac.uk) projects)
- University of Huddersfield ([EBEAM](https://www.huddersfield.ac.uk)) project
- Institute of Education ([IOE - Assessment Careers](https://www.ioe.ac.uk)) project
- Kingston University ([Uniqurate](https://www.kingston.ac.uk)) project
- Manchester Metropolitan University (MMU - [TRAFFIC](https://www曼城.ac.uk)) project
- University of Nottingham ([Rogō](https://www.nottingham.ac.uk)) project
- The Open University partnered by the University of Manchester (OU - [eFeP](https://www.open.ac.uk)) project
- Queen’s University Belfast (QUB - [e-AFFECT](https://www.qub.ac.uk)) project
- University of Southampton ([OMetra](https://www.southampton.ac.uk)) project
- University of Westminster partnered by University of Bedfordshire, Cardiff Metropolitan University (formerly UWIC), City University, University of Greenwich, University of Reading ([MACE](https://www.westminster.ac.uk)) Project

Strand A of the programme consisted of eight projects aimed at achieving large-scale change and these projects will continue their embedding and evaluation activities until August 2014 (and in many cases beyond). The projects did however produce evaluations of their work at the end of August 2013 and much of the material in this overview is drawn from those reports.

This report is one of a series of updates on a programme which has provided a rich source of evidence in many areas where research and evaluation were much needed. Although not all of the projects have reached completion (and much of the activity lies in 'shades of grey' between the two ends of the spectrum suggested here), the evidence base is such as to permit a reasoned discussion of whether the application of technology to assessment and feedback practice can have truly transformative potential.
3. THE ASSESSMENT AND FEEDBACK LANDSCAPE

One of the early activities of the programme was to undertake a detailed review of assessment and feedback practice in eight of the participating universities and to combine this with a literature review to give an overall picture of the assessment and feedback landscape across the UK. A summary of this work has been published (Ferrell 2012a).

This work drew on a growing body of literature and empirical evidence on what constitutes effective support for learning and identified some excellent examples of the innovative use of technology to deliver that support. It found there are some seminal works, such as REAP, that are influencing thinking right across the sector and there are pockets of good and innovative practice in every institution.

The analysis did however paint a somewhat gloomy picture of practice as a whole reflecting the difficulties inherent in scaling up and embedding the good practice and innovation that exists in these small pockets in every university. Overall, the sector was still finding that ‘practice remains stubbornly resistant to change.’ The main findings of the landscape review include:

- the real responsibility for assessment and feedback is highly devolved within universities and considerable variations in practice give many universities cause for concern;
- formal documentation remains quite technical and procedural in nature and is slow to catch up with the shift in thinking about assessment as a more developmental process for as well as of learning;
- the academic structure of degrees, particularly semesterisation, contributes to assessment of learning and diminishes opportunities for assessment for learning;
- academic staff have too few opportunities to gain awareness of different approaches to/ forms of assessment because of insufficient time and a lack of opportunities to share new practices;
- there continues to be heavy reliance on traditional types of assessment such as essays and examinations in some disciplines;
- considerable efforts are being made to develop practice that feeds forwards into the learner’s longitudinal development but academic opinion on approaches to feedback remains divided;
- engagement with employers is causing some institutions to question some of their current practice which does not reflect the ways in which professionals undertake formative development during their careers;
- opportunities for students to engage with assessment design and the process of making academic judgements on their own and others’ work appears to be limited at present;
- many institutions have made significant investment in the technical infrastructure to support assessment and feedback but this is not yet delivering resource efficiencies due to localised variations in underlying processes;
- institutions are preferring to work with existing/established technologies but are nonetheless finding that innovation projects are difficult to scale up;
- institutions need to develop effective structures to facilitate the sharing of good practice that exists in small pockets across each institution.

It is against this backdrop that the universities participating in the programme undertook their own enhancement activities. The programme differs from much of Jisc's previous, more narrowly focused, work on e-assessment in that it has much more of an overtly pedagogical focus. In looking at how technology can best support assessment and feedback practice, the projects went back to first principles about precisely what those activities were intended to achieve.
4. A PRINCIPLED APPROACH

Although it might be assumed that an underlying set of, clearly articulated, educational intentions would form the basis of assessment and feedback strategy and policy in any university, it appears that this is not necessarily the case. Although some universities have high level strategies (learning and teaching strategies are increasingly being renamed learning teaching and assessment) responsibility for assessment and feedback is often devolved to individual faculties, schools and departments and articulation of institutional principles shows considerable concern with issues of procedure and consistency rather than educational design. A key message from this programme is therefore that what is considered good educational practice in each institution should be surfaced and articulated in the educational strategy.

Defining a set of educational principles is a good means of doing this. In a short guide entitled Why use assessment and feedback principles? Professor David Nicol highlights the fact that they can:

- help put important ideas into operation through strategy and policy
- provide a common language
- provide a reference point for evaluating change in the quality of educational provision
- summarise and simplify the research evidence for those who do not have time to read all the research literature

Many examples of educational principles currently available on institutional websites are however tonally and qualitatively different from the principles most often cited as reflecting current thinking and influencing the starting point for the projects in the programme: in particular the highly influential set of REAP principles developed through the work of Professor Nicol and colleagues at the University of Strathclyde and the set of 10 feedback principles published by the NUS as well as earlier work by Chickering & Gamson (1987) and Gibbs & Simpson (2004). Jisc has produced a useful overview of published principles that have influenced the work of these projects. Research into what makes for effective educational principles continues: the REAP work has been extended and further developed through the PEER project (Peer Evaluation in Education Review) and there is a growing body of evidence that highlights the active engagement of learners in assessment and feedback as the critical factor in enhancing learning (e.g. Nicol 2010).

Using the evidence from a baseline review to facilitate a discourse on educational principles has been an important starting point for many of the projects. The baseline has provided an evidence base, situated the discussions in context and supported the use of approaches such as appreciative inquiry. Benchmarking against some of the widely used principles has also been useful to many projects. In some cases institutions are reporting that the involvement in discussion and debate around the principles has proven as valuable as the ultimate conclusions. In other cases a set of institutionally derived core principles has been very much in the foreground of driving an institution-wide approach e.g. at the University of Hertfordshire which saw its assessment for learning principles formally adopted by the University and embedded in its review and validation processes in June 2012.

By defining the educational values that characterise each university, academics, learning technologists and those responsible for quality assurance and administration have been able to work together to look at whether those principles are genuinely reflected in practice and, where improvement is required, to move forward on the basis of a shared understanding of what is fundamentally important. Some projects started out with alternative approaches, e.g. an assessment framework, and have found the value of structuring the discourse of change around a set of institutional principles has become increasingly evident through time.

Educational principles thus represent a robust way of gaining ownership and buy-in although it has been noted that acceptance is not the same as action. Principles need to be written in a way that requires action rather than passive acceptance and agreement on principles may need to be accompanied by some form of goal setting. ‘We therefore found designing principles can be quite paradoxical. On the one hand they must be general and non-contentious so that they attract wide support, but if so then the principles are unlikely to provoke changed practice. On the other hand, if principles are radical and require changes in beliefs about feedback practice, then they will not be readily accepted.’ (IOE)

Prof David Nicol (2009, 2010) has also made the point that generic principles can be interpreted in various ways e.g. the principle ‘Help clarify what good performance is’ can be implemented in ways that
are teacher-centric or in ways that actively engage students. His work is based on the premise that the ultimate purpose of assessment and feedback should be to develop the students’ own assessment skills so that, over time, they become less dependent on others to correct their work and more able to judge the quality of work themselves.

The University of Hertfordshire has produced a series of activity cards for use in staff development workshops to help tutors put principles into practice. See also the work of the University of Ulster Viewpoints project in the Jisc Curriculum Design Programme which looked at broader issues of assessment and feedback in curriculum design.

The University of Dundee drew on Nicol's work in identifying four key educational principles that guided the design of assessment and feedback processes in its projects:

1) Feedback should be dialogic in nature
2) Assessment design should afford opportunities for feedback to be used in future assignments
3) Feedback should develop evaluative judgements and monitoring of own work
4) Students should be empowered to seek feedback from different sources.

An example of how this is being applied in practice is the way in which the University of Dundee is supporting students in critically evaluating their own work by designing a new module which will prepare learners for this process and which will run alongside their whole course as a PDP module. Learners will be introduced to the purpose and point of critical evaluation/ reflection on their own work and will be asked to draw on pieces of reflection to compile a ‘patchwork text’ piece at the end of the course. Similarly the Dundee InterACT project adopted the perspective that 'feedback is a communicative act and a social process in which power, emotion and discourse impact on how messages are constructed and interpreted.' Students now complete a cover sheet consisting of a self review prior to submitting work and use a journal to reflect on the feedback they receive on each assignment.

'Considering the educational principles (and hence values) that drive us as an educational team has been important as they have framed our assessment and feedback re-design to increase the number of formative assignments, considering of sequencing between assignments within and across modules, and design of more authentic assessments.' (University of Dundee)

The University of Hertfordshire has produced some excellent guidance for staff on how to implement its assessment for learning principles.

4.1. USING TECHNOLOGY TO PUT PRINCIPLES INTO PRACTICE

Queen’s University, Belfast has produced the following diagram to show how each of its assessment and feedback principles supports an over arching aim which is to ‘Encourage positive motivational beliefs and self-esteem’, a philosophy enshrined it its Appreciative Inquiry approach to the e-Affect project. The diagram is colour coded to help with mapping a range of supporting resources to the application of particular principles. The colour coding also enables process maps of assessment redesigns to visually relate activities to particular principles. A decision tree offers guidance on ways of implementing each of the principles and technologies that can support this.
Other universities have taken similar approaches to illustrating how particular technologies can be used in support of educational principles e.g.

- The Bath Spa/Winchester 'Which guide to Technology for Pedagogy' using evidence from the project to show which software is useful for what assessment and feedback purpose.

- Exeter used the idea of the popular Top Trumps game to create Tech Trumps cards rating a range of technologies against each of the dimensions (similar to principles or values) in its model of work integrated learning: 'Early evaluation data suggests the top trumps [later rebranded tech trumps] are effective in aligning the affordances of a specific technology with a pedagogic design.'

- The University of Hertfordshire has mapped how a series of case studies on the use of electronic voting systems in different disciplines maps to its assessment for learning principles.

The Bath Spa/Winchester, FASTECH project has involved Student Fellows in its dialogue and has identified two of its principles as being key to working with students:

- Distributing student effort
- Assessment for meaning and learning not measurement

It notes the following successes in using specific technologies to support the implementation of these principles:

- increased time-on-task; reflection, and confidence about goals and standards through weekly blogging on humanities and arts courses;
- increased capacity to self-regulate and ‘close the gap’ on performance through video capture of mock trials in Law;
- better organisation, linking, coherence and overall reflection on tasks through e-portfolios;
- increased student attention to feedback through audio and screencast feedback;
- improvements in the quality of feedback, mainly through the use of Grademark.

The University of Exeter notes that ‘the issue of which technologies are appropriate in education is something of a moving target.’ and that additionally: ’Attempts to align technologies directly with pedagogy may be impractical, as individuals tend to find ways of using technology in unplanned ways to suit their needs.’ Their ‘dimensions’ model is thus a good, transferable model of using practical tools to encourage dialogue around existing practice, design new practice, and evaluate practice all aligning to the principles or values (see section 6). The University has responded to the perception that students feel
institutional technologies have fallen behind in relation to the kinds of end-user applications and devices they experience in their day-to-day lives and believes its employability agenda is furthered by the use of contemporary off-the-shelf technologies to support assessment and feedback practice. This chimes well with the approach taken by Cornwall College in response to consultation with employers.

The Institute of Education has undertaken an evaluation of technology options specifically looking at those that might support of the ethos of linking assessment practice in order to support longitudinal development of learners. They too note the tendency to use technologies in ways that were not envisaged in the original design and comment that ‘In these cases, processes have to work around shortcomings of the tool, which in practice often leads to a higher level of manual intervention. Thus, processes must be robust, and users must adhere to the protocol, because the technology might not validate user input.’

Other institutions report a fear that, rather than working round the limitations of a particular tool, staff will find that the use of technology constrains creativity and innovative approaches. ‘I fear that driving staff down this road would make them revert to forms of assessment that are easy to submit and mark online rather than being innovative with assessment practices.’ (Glamorgan). The programme did not however produce any evidence that this was happening in practice.

The difficulties in attributing specific outcomes to particular technology interventions are well known and rehearsed and have, unsurprisingly, been reiterated across the programme:

'It is difficult to spot before-after quantitative differences in measures of student learning (such as exam marks), because technology is always a single component in a complex system in which administrative arrangements, teacher effort, classroom practices and student variables vary and interact. Even where there are measurable improvements they may not be due to the technology intervention.' (Reseaching the effectiveness of technology: review for FASTECH project by Graham Gibbs)

The Bath Spa/Winchester team goes on to suggest that this demonstrates the value of its case study approach to publishing outcomes: ‘Even when a clear before-after difference can be demonstrated, using a consistent quantitative measure, there is no guarantee that the same impact would be evident if a different teacher in a different context undertook the same intervention. Teachers make local decisions with awareness of contextual features and in the light of their own beliefs and practices, and need convincing rationales accompanied by credible accounts rather than quantitative ‘proof’ that methods ‘work’.

A key message from the programme overall relates to the value in academic staff first engaging in conversations around enhancing assessment and feedback and then considering technology such that the pedagogy is driving the conversations. Whilst principles can be a convenient way of summarising a complex body of research literature, it is also important that institutions have mechanisms for ensuring staff keep up to date with current thinking and disseminate new findings to support this dialogue.

In recognising the potential of technology to enhance academic practice, academics are also finding it important to engage with learners in a dialogue around the appropriate use of technology in assessment and feedback. Whilst some institutions reported tutors deeming it important to have time and space to familiarise themselves with new technologies before working directly with students, others, such as at Bath Spa/Winchester and Cornwall College found working in partnership to be greatly enabling: ‘... members of their tutor groups reported that their willingness to try out the new methodologies was supported by the feeling that they were learning something new together, being ‘pioneers’ and that this group included the tutors as equal partners in the innovation. ‘Learning together’ was reported by tutors as being important to student perceptions and having a key role in the student’s willingness to engage with the pilot.’ (Cornwall College)

5. TECHNOLOGY SUPPORTING FEEDBACK AND FEED FORWARD

Feedback provides information to learners about where they are in relation to their learning goals, enabling them to evaluate their progress, identify gaps or misconceptions in their understanding or knowledge and take remedial action. Generated by tutors, peers, mentors, supervisors, a computer, or as a result of self-assessment, feedback is a vital component of effective learning.

Feed forward is as important to learners’ progress as feedback. While feedback focuses on a learner’s current performance (and may simply justify the grade awarded), feed forward looks ahead to the next
assignment, offering constructive guidance on how to do better in future work. A combination of the two ensures that assessment has an effective developmental impact on learning provided (see Nicol 2013, 2014) the student has the opportunity and support to develop their own evaluative skills in order to use the feedback effectively.

The Institute of Education has produced a useful diagram on the role of feedback in enhancing learning.

In the early part of the programme it was found that, within individual institutions (and indeed sometimes even within disciplines), approaches to feedback represented one of the most diverse and inconsistent aspects of learning and teaching practice. A key aim of many of the projects was to better support learners’ longitudinal development and this has been furthered by projects taking the following types of action:

- Providing feedback in a more timely fashion (including development of some online assessment systems that provide immediate feedback) so that the student can act upon it in producing the next piece of assessed work.
- Improving student understanding of the nature and purpose of feedback (students often do not understand what is meant by feedback and the wording of the NSS questions in relation to this area are unhelpful).
- Creating the conditions for staff/student dialogue instead of seeing feedback as something that is delivered to the student.
- Inviting academic staff to reflect on and analyse the type of feedback they give.
- Developing tools to aid analysis/auditing of feedback
- Developing systems that permit tutors to gain a longitudinal view of a student’s previous feedback

'The changes will be sustainable only if there is change in beliefs about feedback: that feedback should be student–centric not teacher–centric and that feedback should have longer-term as well as immediate aims.' (IOE)

The concept of feeding forward needs to be accompanied by specific action in terms of monitoring progress and impact on learning. We see this working in practice in examples such as the use of reflective journals in a number of projects but it is interesting that, despite benefits evidenced in earlier work, the use of e-portfolio tools did not feature prominently in the programme.
5.1. IMPROVING THE TIMELINESS OF FEEDBACK

A 'modelling tool' that has proven useful in reviewing assessment practice, and particularly identifying issues with the overall assessment timetable, is the concept of assessment timelines as developed by the ESCAPE project at the University of Hertfordshire. This is used to model patterns of high medium and low stakes assessment across a 12 week semester. An example is shown below:

A typical example of assessment:

Many of the projects in the programme undertook this type of modelling and identified that certain subject areas exhibited a significant reliance on end of semester high-stakes assessment that did not offer opportunities for formative feedback. Bath Spa/Winchester found that, as a result of reviewing the patterns, some programmes decided to break their traditional pattern of two assessments per module, and develop habits of slow learning while providing more opportunities for low stakes formative assessment. The modelling also influenced change at Queen’s University Belfast and the University of Dundee. The diagram below shows the result of changes to a programme at Dundee in order to better meet their stated principle that 'Assessment design should afford opportunities for feedback to be used in future assignments."

'It was decided that the first two compulsory core modules should each be assessed using four short assignments to gently scaffold and optimise students’ academic writing and critical thinking through iterative feedback. Subsequent modules use fewer and longer assessments to encourage deep critical evaluation and prepare students for writing a Masters dissertation.' (University of Dundee)

Whilst it would be possible to improve timeliness of feedback while still operating within a model where the responsibility lay primarily with the tutor, it is evident that students are not unaware of the benefits of formative assessment and the potentially negative implications of poor curriculum design and scheduling for their ability to take control of their own learning. The University of Huddersfield reported the reaction of a student who had received feedback on a formative submission after the subsequent summative was due: 'This student reports being ‘furious’ about this, and talks about the tutor’s behaviour in terms of laziness, repeatedly remarking that they hadn’t ‘bothered’ to return it. This student’s anger is focused on
the fact that the students had ‘lost a substantial portion of their time to improve’ and that they were consequently ‘working blindly’. (Huddersfield)

On a related theme, the University of Glamorgan (now the University of South Wales) also sought to address the issue of ‘assessment bunching’ whereby several assessment deadlines fall on the same date resulting in poorer quality submissions as students have less time to spend on each assignment and lower attendance in lectures and seminars whilst students are concentrating on the multiple assessments to be submitted as well as the lack of opportunity for formative feedback. The University has developed the Assessment Diary which is essentially a personalised list of modules, dates for assessment submission and return of feedback accompanied by a series of automated reminders before each of the deadlines. The University noted that the technology worked well but was nonetheless reliant on academics engaging in dialogue about curriculum design and scheduling: ‘The diaries serve their purpose but academic staff stressed the importance of the need for willingness to negotiate deadlines within teaching teams.’ In this respect the diaries appear to have been as useful to staff as to students: ‘However, an unexpected outcome was the number of staff who referred to the Assessment Diaries as a mechanism to manage their own marking deadlines to ‘avoid personal bunching’ and manage their marking loads.’ (Glamorgan)

As well as having pedagogical implications, the frequent emphasis on summative assessment towards the end of the teaching programme has implications for the workload of both students and staff as well as the supporting processes. Manchester Metropolitan University undertook some modelling from its coursework submission database and identified significant peaks in assignment submissions (the highest being around 17,000 individual submissions due at the end of March 2012). Even where such peaks are well-managed to the extent that individual learners do not have multiple assignment deadlines falling at the same time, they have major implications for academic and administrative staff workload. As a result of its curriculum review MMU has reduced the total number of pieces of coursework it handles annually from c.620,000 to c.400,000 by insisting on a maximum of two pieces of summative assessment per module.

As well as ensuring that the overall design of the curriculum allows the opportunity for feedback to be acted on, institutions have also been looking at other ways of achieving a shorter turnaround time including the use of peer review: ‘There may be a trade off between the rapidity and quality of feedback so that, for example, imperfect feedback from a fellow student provided almost immediately may have much more impact than more perfect feedback from a tutor four weeks later.’ (Cornwall College)

Disaggregating grades and feedback is another option that a number of institutions have considered. This can have benefits both in terms of improving timeliness and also in ensuring that students engage with the actual feedback rather than just looking at the final mark. In many cases however, despite the benefits, institutions have shied away from making such a change due to the need for amendments to academic regulations.

5.2. IMPROVING THE USEFULNESS OF FEEDBACK

Given the importance of feedback in effective learning, perhaps one of the most startling revelations of the programme is the very limited extent to which feedback given to students is ever discussed and compared within course or programme teams. It has been noted that course teams take for granted the need to meet to discuss differences in grades but that differences or inconsistencies in feedback are rarely identified and discussed. The Institute of Education has talked about ‘opening the ‘black box’ of feedback practice for both staff and students’. A strong message from the project teams is that clarifying what purpose feedback is expected to serve and analysing tutor feedback has to become normal practice for academic staff.

‘Feedback is not often discussed formally and the consultations on the principles invited lively debates and have established that feedback practice does need discussion as well as marking processes. Greater transparency and discussion about feedback is essential for developing consistent and fair feedback practice across the institution … Greater discussion also might help the spread of good practice.’ (IOE)

Feedback can take many forms: Hattie & Timperley (2007) have explored this issue in detail and they note that feedback aimed at the person (e.g. praise) and feedback on content is much less effective in the long term than feedback on skills and on self-regulatory abilities (e.g. feedback on students' self-evaluations) as the latter are more likely to develop autonomy in learning over the long term and an ability to make evaluative judgements without the support of the teacher.
One of the key outcomes of this programme has been the creation of some tools for analysing feedback and the analysis of some hard evidence. The evidence appears to suggest that typical feedback profiles may differ considerably between institutions although, in all of the published examples, the 'typical' profile in the analysed sample is skewed towards a particular type of feedback rather than sufficiently rounded to provide optimal learner support. To look at a few examples (analysed using different techniques):

- in the University of Dundee sample (PG online distance learning programme in medical education) 95% of feedback was content related and 72% related to the immediate task.
- in the Institute of Education sample praise statements were the commonest element of summative feedback; there was little advice given and that advice was short rather than longer term.
- in the Open University sample (modern languages) a higher percentage of comments concentrated on weaknesses rather than strengths.

These are very high level summaries of analyses undertaken using different approaches, what is more interesting than the specifics of each profile is their skewed nature and more important than the actual outcomes was the dialogue within academic teams that this generated.

A number of the profiling tools used during the programme are freely available:

- University of Dundee coding framework
- Institute of Education feedback profiling tool and guidelines
- Open University Feedback Analysis Chart for Tutors (FACT)
- University of Southampton OMTetra tool which monitors the consistency of e-feedback and helps support tutors through a strong formative function where the tutor engages in reflection about the quality and appropriateness of their feedback.

Queen’s University, Belfast has taken a similar approach and developed a feedback framework as a result of one school deciding to include staff review of one another’s feedback as part of its action plan developed as part of an ‘appreciative inquiry’ process. In many cases institutions reported that academic staff had previously simply not had access to this type of information or a forum in which to discuss the issue. ‘Another important lesson learned is that the pilot leaders have not had opportunities in the past to reflect on why and how they give feedback to learners.’ (IOE) Tutors using the University of Southampton OMTetra tool reported that having access to an analysis of their feedback to students gave them the opportunity to reflect on their feedback practice and had the potential to positively affect students’ learning and performance. A blog post entitled ‘What do you do with feedback?’ from Manchester Metropolitan University project team points academics to ways in which they can take action to improve the dialogue.

At the Institute of Education the profiling tool was originally developed as an audit facility to help with the evaluation of the project and it has now been adopted as a very useful staff development tool that is serving as a catalyst for change. Whilst there is increased staff awareness of different categories of feedback and an effort to do more in terms of feed forward, change is taking place at a different pace in different areas. In one programme the feedback is definitely more developmental as evidenced by the profiling tool and external examiners reports whereas in others it appears that tutors have included additional comments in their feedback to respond to student queries raised on assignment cover sheets rather than changing the overall category profile of their feedback. ‘It seems that a predominantly praise-critique profile for written feedback is very entrenched and hard to shift.’ (IOE)

Aside from the cultural issues involved in changing habitual behaviours, projects also had to deal with the fear on the part of academics that giving better feedback necessarily means increased workload. This appears to have been the initial assumption of many staff who were delighted to find that giving better feedback actually improved the self dependency of learners and reduced the overall amount of time they spent giving feedback and the need to repeat the same feedback many times (see for example the evidence from the Dundee EFFECT project).

‘... seeing students making progress through feedback helps to ensure that marking and feedback are worthwhile and rewarding activities for assessor. There is no reason why assessment cannot be as rewarding and inspiring as teaching.’ (IOE)
The final report on various pilots of the Making Assessment Count (MAC) approach developed by the University of Westminster makes an important point about the need for tutor feedback to instigate action on the part of the student. This is very much akin to the earlier discussion about the need to articulate academic principles in a way that demands action rather than passive acceptance: ‘A focus on feed-forward/action on feedback is an effective driver to get academic staff to rethink the feedback they are giving as the student can only write their action plan if the feedback they have received can actually lead to action on the part of the student, therefore it re-frames feedback for staff – they are forced to think about what they are expecting the student to do with the feedback.’ (Westminster)

The programme has produced some interesting research on the impact of the medium upon the message. Research by the Open University shows that academic staff give qualitatively different feedback in different media. The eFEP project looked specifically at language programmes where there are obvious advantages in audio feedback in terms of being able to reflect intonation and pronunciation and suggested that staff should look beyond these immediate before audiences and use the media to give a richer, personalised feedback on a variety of areas.

In a similar vein, the University of Huddersfield identified that students using an online marking rubric found this much more context specific, and hence more comprehensible, than the printed version of the same schema: ‘Reflecting on how what we do when we offer feedback and, particularly, the mechanisms we use to do this might, impede this aspiration [to achieve and improve] is sobering indeed. This presents food for thought and sheds new light on the much-spouted gripe amongst academic tutors that students never act on their feedback. What this suggest is that the reason for this could have more to do with how we present that feedback than the students’ motivation (or lack thereof).’ (Huddersfield).

The idea that the delivery mechanism affects the usability, and hence the usefulness, of feedback was also reflected in other student evaluations of paper versus online feedback at the University of Huddersfield. Whilst a significant minority of students preferred paper (generally these learners exhibited an older age profile and described themselves in terms such as ‘old school’) many students reported that having the feedback available in electronic form made it easier and therefore more likely for them to revisit it at a later date than if it was on paper: ‘It is clear that, for these students at least, having feedback electronically makes sense to them and fits in effectively with the way they manage their lives. The concept of having data as valuable as assessment feedback in only one format and for that format to be something as ephemeral as paper does not just feel logical to them.’ (Huddersfield). This work suggests that, in order for feedback to be genuinely inclusive, it may need to be available in a variety of formats.

Manchester Metropolitan University has produced a useful set of feedback resources for academic staff.

5.3. IMPROVING DIALOGUE AND LEARNER ENGAGEMENT WITH FEEDBACK

One of the main purposes of feedback is to help learners develop the capacity to self regulate as identified by Nicol and Macfarlane-Dick (2006) ‘Feedback should serve the function of progressively enabling students to better monitor, evaluate and regulate their own learning, independently of the teacher. Learning is enhanced when learners are self-regulating, actively engaging in setting learning goals, selecting strategies for achieving these goals and monitoring their progress toward these goals.’ These ideas have been further developed more recently by Nicol (2013, 2014) who identifies that self-assessment alone has limitations in terms of developing the required skills. He suggests that providing feedback to peers offers additional benefit in terms of letting students see their own work in a new light and helps them develop their own concept of quality through seeing many examples of work written to the same assignment brief including their own.

Many of the projects sought to build on similar ideas and had goals relating to moving away from a ‘transmission’ model whereby feedback is something that is ‘given to’ students towards one where responsibility is shared and students take greater control of their own learning. The University of Dundee placed great emphasis on creating the conditions for dialogue around feedback: ‘Neglecting dialogue can lead to dissatisfaction with feedback. The transmission model of feedback ignores these factors and importantly the role of the student in learning from the feedback. Simply providing feedback does not ensure that students read it, understand it, or use it to promote learning.’ (Dundee)

At the University of Dundee interventions on a PG online programme in medical education included the requirement for students to submit a (compulsory) cover sheet with each assignment reflecting on how well they think they have met the criteria and indicating how previous feedback has influenced this
assignment. Following feedback from the tutor they are then invited to log onto a wiki (this is optional) and include a reflection on the following four questions:

1. How well does the tutor feedback match with your self-evaluation?
2. What did you learn from the feedback process?
3. What actions, if any, will you take in response to the feedback process?
4. What if anything is unclear about the tutor feedback?

The project evaluation report found that these activities promoted desirable behaviours in both students and tutors and that participants detected a qualitative improvements in learning. 'Staff have found the dialogue with students energising and the acknowledgement that students are learning from the feedback satisfying. Tutors have also learned from students’ comments in the dialogue – demonstrating reciprocal learning.' (Dundee)

The project team did however note the difficulty in providing quantitative evidence and the wide variation in student evaluative capabilities: 'A final aspect to note is that we did not manage to find a good way to measure whether students’ self-review is improving as they progress through the course. We felt that self-reporting tools would not give us the necessary information. As a team though what we have noted is that the range of quality of self-review across the students is very wide and we plan to educate them on the project more and also on what self-review is about and how to use interACT to their advantage to optimise their learning.' (Dundee)

The Dundee experience was borne out elsewhere as a number of projects were working specifically on programmes involving professional development at Masters level and it came as something of a revelation to many academics how much support and development was needed to help those learners engage with feedback and become active participants rather than passive recipients. 'There was also a realisation that many students need to be helped to engage fully with feedback and that even at M level assessment literacy is very variable.' (IOE)

The Institute of Education also adopted reflective cover sheets on a professional development programme and comments from some students on the sheets revealed very clearly that they saw feedback as the tutor’s job:

'I don’t care! If I knew what areas I want feedback on I’d know how to write the essay in the first place..... I thought that’s your job, surely.

'...it was like this is ridiculous... how do they expect us to know what they want? I want to know everything.”

(Clinical Ed students IOE)

The findings back up Prof Nicol's assertion (see section 4) that ostensibly sound academic principles can be applied in a learner-centred way or can equally be applied in a tutor-centric way that undermines what they are trying to achieve e.g. an assignment cover sheet can be a useful reflective tool but simply giving students a form to fill in to request feedback does not necessarily challenge a teacher-centric approach:

'The coversheets are not helpful in encouraging less aware students to do this as they do not prompt a self-assessment. In fact, by suggesting students write a ‘shopping list’ of what they would like feedback on it reinforces the idea that tutors give and students receive feedback.' (IOE)

The Institute of Education has now renamed the cover sheets 'Feedback Response Sheets', not least to indicate they are not merely a bureaucratic exercise. This approach is more in keeping with the more scaffolded approach taken at the University of Dundee where the self-review in the original assignment cover sheet is accompanied by an entry in a reflective journal giving the student's response to the feedback received although the message about the need for greater learner development was the same in both cases.

The MACE project, led by the University of Westminster, evaluated the application of a Making Assessment Count (MAC) approach across a range of different institutions. The MAC approach is intended to promote student self reflection to enhance learning and uses a range of simple technologies in an integrated process that collates feedback, guides student reflections and facilitates their use of feedback to improve performance. The institutions who piloted the approach did so in different ways and in some (notably Cardiff-Metropolitan and City universities) the approach is now focused as much on working with students as they approach a piece of work and instilling the skills and good practice for study in HE, as it is on helping them to reflect on what they finally delivered.
The University of Glamorgan has also engaged in academic debate about the value of different types of support afforded to students including the automated reminders included in its personalised Assessment Diaries: ‘One unexpected outcome from interviewing academic staff was the concern about the pedagogical value of using reminders for students studying at all levels. It was felt that this may lead to under-development of independent or autonomous learning skills. To balance this argument, some academic staff felt that the diaries are assisting students in upskilling their time and task management abilities by providing a framework within which to approach the management of their assessment task.’ (Glamorgan)

The Institute of Education has found that the term ‘assessment literacy’ is being increasingly used and recognised to describe the skills that need to be developed early in the learning process. The essence of this thinking is that students must begin to develop the same kinds of assessment skills that teachers possess. This is discussed further in section 12.1 where we identify, for example, that understanding grading criteria is only one aspect of developing appropriate evaluative expertise themselves and must be moderated by considerable tacit knowledge.

Cardiff Metropolitan University (one of the partners in the MACE project) puts this model into an overall concept of ‘introducing students to the demands, skills and practices of higher education’ and has introduced this as part of the induction process into higher education. They note that the concepts can come as a bit of a shock to students entering HE for the first time but that nonetheless instilling the skills and practices right from the beginning is easier to do than when students have become accustomed to a more traditional (i.e. passive) approach to feedback.

The Open University eFEP project took the innovative approach of using Jing screencasts to enable students to give ‘feedback on feedback’ to their tutors and concluded: ‘The findings confirm tutors’ fears that their feedback does not always achieve its intended purpose, for reasons which the project identified as either cognitive (e.g. due to insufficient depth of feedback) or affective (apparent lack of acknowledgment of students’ efforts or individuality). The ‘feedback on feedback’ approach makes such mis-alignments between students’ needs, assumptions and expectations apparent and therefore constitutes an excellent means of improving feedback alignment and fruitful dialogue between students and tutors.’ This work is discussed further in a paper by Fernández-Toro & Furnborough (2013).

5.4. SUPPORTING PEER REVIEW

Both self reflection and peer review are important elements of engaging students with assessment and feedback practice such that they are able to improve their own evaluative judgement (and their employability see section 6). Some of the excellent work in supporting self reflection (e.g. at the University of Dundee) has already been discussed above and there are also some interesting developments in peer review.

At the University of Manchester the eFeP project undertook an evaluation of student peer-to-peer feedback and found that it ‘...demonstrated students’ ability to reproduce feedback-specific vocabulary in an appropriate and context-specific manner, which is evidence of the students’ engagement with the feedback received from their tutors.’ Overall the University concluded that the findings seem to suggest that active student involvement in the peer-to-peer feedback results in an improved understanding of the feedback process as a whole.

At Queen’s University Belfast a number of schools are taking forward aspects of peer review including students ‘marking’ and discussing exemplar work from previous cohorts and the introduction of a peer-reviewed coursework element amounting to 10% of the summative assessment for a course that was previously 100% examination. Evidence of impact will be evaluated in 2014.

Peer interaction was a key focus of the Student-Generated Content for Learning (SGC4L) project at the University of Edinburgh which aimed to evaluate the impact and educational effectiveness of using a free online tool (Peerwise) that permits cohorts of students to create, answer and discuss assessment questions they have created, across a range of undergraduate science courses. The evaluation concluded that the tool was effective in improving student attainment and that mid range students (as determined by a prior diagnostic test) benefited most from its use. The evaluation was not however able to draw any conclusions as to which aspect/s of the interactions were most effective: ‘It is less clear whether this effect arises from authoring questions or from answering, rating and commenting on questions written by other students.’ The study found that the workload associated with use of the tool...
was not onerous for staff and the project has published a briefing paper containing some good practice guidance as well as a full evaluation report. The project team noted one unintended consequence of their activities: ‘Additionally, the project has provided evidence of a vein of student creativity that has, to date, largely gone untapped within these (and other) courses.’

Application of the University of Westminster Making Assessment Count (MAC) approach at Cardiff Metropolitan and City Universities led to increased emphasis on peer review as the element of the approach involving the highest degree of engagement between staff and students, resulting in the greatest alignment with assessment for learning principles (as outlined by the University of Hertfordshire) and making the most significant shift towards an assessment for learning pedagogy. The final evaluation notes: This is evidenced by feedback from students which highlights that as isolated tasks, peer assessment, the self-assessment questionnaire and reflective blogs were not considered particularly impactful. However, as a collective exercise the students were in praise of the feedback that they received from engaging with each individual step of the process. It was from this perspective that they began to see the ‘bigger picture’.

This is illustrated in the table below which looks at how the different elements of MAC support assessment for learning principles and each of these is unpicked in more depth in the MACE Evaluation Report.

<table>
<thead>
<tr>
<th>MAC Self Review</th>
<th>MAC Engage</th>
<th>MAC PDP</th>
<th>MAC Peer Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student completes online questionnaire &amp; survey in e-Reflect system. System processes responses to generate feedback report customised to student responses. Student left to independently utilise the output.</td>
<td>As above but student additionally writes a reflective passage in light of the feedback report and shares this with tutor for input, comment online.</td>
<td>As above but tutor and student hold a specific meeting (face to face or online) in order to place the feedback + engagement in the wider context to the student’s course and personal development. A specific output is a personal plan for going forward.</td>
<td>As above, and includes staged formative feedback including peer feedback/review.</td>
</tr>
<tr>
<td>Engages students with the assessment criteria</td>
<td>⬤⬤⬤⬤⬤</td>
<td>⬤⬤⬤⬤⬤</td>
<td>⬤⬤⬤⬤⬤</td>
</tr>
<tr>
<td>Stimulates dialogue</td>
<td>□□□□□</td>
<td>⬤⬤⬤⬤⬤</td>
<td>⬤⬤⬤⬤⬤</td>
</tr>
<tr>
<td>Focuses on student development</td>
<td>⬤⬤⬤⬤⬤</td>
<td>⬤⬤⬤⬤⬤</td>
<td>⬤⬤⬤⬤⬤</td>
</tr>
<tr>
<td>Ensures feedback leads to improvement</td>
<td>⬤⬤⬤⬤⬤</td>
<td>⬤⬤⬤⬤⬤</td>
<td>⬤⬤⬤⬤⬤</td>
</tr>
<tr>
<td>Considers student and staff effort</td>
<td>□□□□□</td>
<td>▬⬤⬤⬤⬤</td>
<td>▬⬤⬤⬤⬤</td>
</tr>
<tr>
<td>Supports personalised learning</td>
<td>□□□□□</td>
<td>▬⬤⬤⬤⬤</td>
<td>▬⬤⬤⬤⬤</td>
</tr>
</tbody>
</table>

It appears that in general both students and staff in the MAC pilots saw the benefits of peer review: ‘Peer feedback sessions were highlighted by a large proportion of students as the most beneficial aspects of the MAC processes.’ (Westminster). The final report from the pilots does however raise a note of caution.
that not all students responded so positively to the approach highlighting the need to educate them about the benefits: ‘Although students generally felt that peer feedback had significant, positive impact on their learning and development, some students perceived this to be of minimal value as they do not value their peers’ judgements.’ (Westminster).

Whilst only one element of a rich variety of interventions being undertaken in the programme, the, largely untapped, potential of peer review is now the focus of much research in the UK and internationally. Current thinking is that embedding peer practices in curricula may be the single factor that will make the biggest difference to student learning as reviewing others' work develops critical thinking, independence of judgement, reduces dependency on the teacher and results in students generating feedback for themselves while they produce it for others. The PEER Toolkit project has produced guidance for other institutions in the form of a 'how-to' guide on peer review and other support materials for those wishing to implement peer review in a classroom, department or institution. Nicol (2014) summarises what he believes should be the principles of good peer review design.

Good peer review design should:
1. Encourage an atmosphere of trust and respect
2. Use a range of perspectives for the review tasks
3. Give practice in identifying quality and in formulating criteria
4. Require well-reasoned written explanations for feedback responses
5. Facilitate dialogue around the peer review process
6. Integrate self-review activities into peer review designs
7. Encourage critical evaluations of received reviews
8. Provide inputs that help reviewers calibrate their judgements

5.5. IMPROVING LONGITUDINAL DEVELOPMENT

A major focus of many of the projects in the programme was improving the extent to which feedback supports the ongoing development of the individual learner by feeding forward into their future learning. ‘... an underlying problem with many assessment regimes is that assessments are undertaken on a piecemeal basis and that there is little continuity. Feedback tends to focus on the immediate task and not surprisingly does not routinely include feed forward to future assessment.’ (IOE)

The issues to be addressed are both cultural (the fact that discussing feedback is not normal academic practice) and structural (there are particular difficulties in terms of making longitudinal links to support further development for tutors who only teach a small part of a programme). One of the issues raised by the feedback audits undertaken as part of this programme was the failure to pick up on warning signs such as a student receiving the same feedback many times but failing to improve.

The Institute of Education has been working on the concept of an 'assessment career' building upon a range of previous research including work on ipsative assessment whereby feedback acknowledges progress against the learner's previous performance regardless of achievement (see Hughes et al 2010). The University of Dundee has delivered process change to provide a longitudinal overview of tutor feedback and student reflection on previous assignments and Bath Spa/Winchester universities focused on whole programme transformation to support coherent approaches to student learning through assessment design focused at the level of the degree programme rather than the module.

Key to supporting this type of development (and indeed to addressing the issues already raised above) is transparency in the feedback process. 'Much feedback practice occurs behind closed doors and only seen by the giver and the recipient(s) but making feedback shareable between staff could help the spread of good practice by example as well as improving consistency of practice.' (IOE)

Technology has a vital role to play here but it has been noted that most of the VLEs in common use record both marks and feedback at a module level so that it is not easy to gain an overview at programme level. ‘There is a role for technology here in storing feedback across a programme and making it easily accessible to staff and students so that a longer-term picture of learning can emerge and this could become a standard feature of VLEs.’ (IOE) A further issue is that modules are often only 'live' and therefore accessible to students until the completion of that module hence any feedback is not available longer term (unless printed out and hence no longer interactive). 'Being able to link or transfer these interactive versions of feedback] to ePortfolios would seem an obvious solution to this issue.' (Huddersfield)
Given the difficulties in creating an environment where feedback is available in a way that promotes effective student support, it is unsurprising that we have not found any evidence of assessment and feedback being linked to personal tutoring where such schemes exist.

The University of Dundee EFFECT project replaced a personal tutor system with a technology-supported approach to team tutoring. The technology elements consist of a blog, micro-blogging tool (Twitter) and a centralised email account, all badged ‘TQFE-Tutor’. All programme communications between academic tutors, administrators, participants and associate staff take place via the TQFE-Tutor utilities. The approach has enabled an academic team that has halved in size over the last five years to deliver more effective longitudinal support to its learners and to evidence the following benefits:

- Enhanced self-direction in programme participants
- Greater opportunities for peer assessment and collaboration/networking in a distance learning context
- Improved final results (i.e. more programme participants successfully completing the programme within one academic year)
- Improved informal staff development opportunities
- Workload savings for participants and all staff groups (administrative, academic, associate)
- Speedier response time for communication with TQFE-Tutor
- Better quality feedback and more consistent across a geographically diverse team
- Improved support for participants and associate staff

‘Previously, any staff member being unexpectedly absent due to illness caused considerable disruption for programme participants – who were often left without tutor support for unacceptably long periods – and for the remaining staff, who, having no access to correspondence between the absent colleague and their tutees were ‘in the dark’ regarding the progress of that group of participants. For this and a host of other reasons, TQFE-Tutor is a highly appealing proposition.’ (Dundee)

The Institute of Education also believes that a longitudinal approach to feedback will deliver workload efficiencies as well as better learning outcomes for the following reasons:

1. engaging students more with feedback reduces the need for assessors to write lengthy and time-consuming feedback.
2. if students are better able to heed and understand feedback through dialogue there will be less repetition of feedback across a programme.
3. tailoring feedback to student requests is also more likely to have an impact than feedback that the student is not ready for – again targeting resources effectively.

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1 TQFE stands for ‘Teaching Qualification Further Education’ – a professional development programme for lecturers in the post-compulsory education sector.
6. EMPLOYABILITY

Graduate employability is a major issue for institutions and students alike and was therefore an important focus for a number of the projects in the programme. What has become evident over the course of the work is the extent to which the ways in which assessment and feedback promote employability are inextricably linked with many of the other issues of practice discussed here.

The difference between the current institutional emphasis on summative assessment and the more formative ways in which professionals develop throughout their careers (including through extensive use of peer review) has occasioned much comment: ‘Assessment in business is much more about ongoing, formative feedback, from clients as well as peers. Although there is some formal summative assessment, for example exams required by professional bodies, this comprises only a small amount of the overall evaluative practice within business.’ (Exeter).

Thinking at the University of Exeter went so far as to challenge received wisdom that greater definition and clarity in relation to marks and grading is necessarily a good thing: ‘What emerged was the notion of business clients as assessors, and the critical notion that in a business scenario you do not know exactly what you will be assessed on. Indeed, it could be said to be part of the assessment itself, in a business context, to work out exactly what is expected from you based on the client and the information that they may or may not be providing.’ (Exeter)

In a business context working out exactly what the client requires, and what are the most crucial parts of the brief, can often be challenging but key to success. This is in line with much thinking elsewhere in the programme about the value of engaging learners in defining assessment criteria and making evaluative judgements. In employment settings professionals also require skills in giving feedback not just in interpreting feedback.

A number of the projects with a strong focus on employability noted that employers tend to talk as much about attitude as about skills. Cornwall College identified that the key soft skill requirements of employers for graduates are:

- Appropriate communication skills
- Resourcefulness
- Listening and seeking clarification
- Ability to seek feedback

The College concluded that the whole area of digital literacies and supporting learners to develop and maintain their virtual identities is of far more significance than training them to use specific tools (the Jisc Developing Digital Literacies programme also found that the concept of ‘digital influence’ is becoming of increasing importance to employers).

Cornwall College began its project believing that 'What you assess is what you get', and the early stages of its work focused very firmly on ensuring that what is assessed is what employers need informed by an employer workshop and working with SMEs in the region. By the end of the programme the College attitude was somewhat more nuanced informed in no small part by the experience of working in partnership with learners: ‘In this respect the operating assumption of ‘what you assess is what you get’ is clearly only part of the outcome, ‘what you get’ can be amplified tremendously by good assessment design, detailed and timely feedback, and a shared understanding of the benefits of learning through and beyond assessment.’

The importance of learner engagement in assessment and feedback practice is borne out by anecdotal evidence from the College that those students who engaged most effectively with the pilot are also those who have secured the most positive employment outcomes. Whilst the College is cautious about claiming a causal link it notes: ‘Although it is difficult to confirm absolutely at this stage the nature of the relationship between increased confidence and employability it is certainly possible to indicate a link between confidence levels, willingness to engage in learning and the quality of the experience during the programme as key factors to the quality of the student experience ...’ This is particularly interesting in the light of findings at MMU that confidence is the single biggest factor in determining levels of student satisfaction (see section 8).

The University of Exeter produced a definition of the type of assessment it feels is necessary to enhance graduate employability: ‘An assessment in which students perform work-focused tasks that blend
academic and professional knowledge and skills.' It had more difficulty however in finding a term to describe this form of assessment. Initial use of the term 'authentic' assessment was challenged by a number of academic staff who felt it implied that other forms of assessment were not necessarily valid in their own context. The project ultimately conducted a survey that solicited staff views on a variety of terms:

- integrated
- work focused
- authentic
- experiential
- work-related
- contextual
- alternative
- situated
- other

The outcome of this activity and work by its Employability Division to develop a new strategy was to adopt the term 'work-integrated assessment' and the project team has developed a model which it believes captures the various dimensions of work-integrated assessment in a way that is helpful in stimulating thinking about curriculum design whilst remaining open to individual and contextual interpretation. The diagram below gives an outline of an early working prototype that is now available as a more interactive presentation with accompanying video. The model can be used in a practical way in dialogue with staff to look at where current assessments sit, plot where they’d like to be, design interventions (using the Tech Trumps cards to determine appropriate technologies to use), and evaluate the interventions, so closing the loop.

An issue noted at Exeter is that, although students may have many of the vocational competencies required by employers, they are often unable to articulate and demonstrate their abilities in job interviews etc. The dimensions of peer review, collaborative working and audience in the work-integrated assessment model now help to ensure that assessments structured in such a way as to evidence these skills.
An example of how the use of these approaches has impacted actual practice includes a Psychology module where the original module assessment was planned to be a written examination and which was subsequently redesigned using the dimensions model such that a collaboratively designed flyer was set as the main assessment. Furthermore the assessment involved working with two external ‘audiences’: a Lived Experienced Group (people with mental health issues) and the University of Exeter’s own Wellbeing service for students. One of the elements of the module evaluation (below) shows clearly the link between the revised module structure and the development of some of the key professional skills that were the intended outcomes of the module.

Manchester Metropolitan University has introduced an Employability Curriculum Framework including a set of graduate outcomes which should be assessed in every programme and each unit (module) description at undergraduate level now indicates which of these outcomes is addressed in the unit. This is explained in a short video. Tying the outcomes recognisably into each assessment strengthens the concept of employability in the curriculum and improves transparency and consistency as well as offering the potential to include better information for the Higher Education Achievement Report without extra work on the part of staff.

A key message from the programme is that the types of activities and behaviours that promote assessment for learning are very much the same as those that promote good employability outcomes. This is perhaps unsurprising (see Boud & Falchikov 2006) but it appears to be something that is not currently well communicated to students. Institutions report considerable risk aversion on the part of students in relation to changed and/or innovative assessment practices and particular scepticism about the value of self and peer review. It seems that we need to develop better means of communicating to learners and potential learners that some of these practices, which might challenge their traditional assumptions about what constitutes a higher education experience, are in fact crucial in achieving the very outcomes they hope that experience will deliver.

7. STUDENTS AS PARTNERS

A strong emphasis on active and meaningful learner engagement in relation to the design of assessment and feedback practice has been a feature of many of the projects in this programme. This contrasts with the paucity of evidence of learner engagement identified in the original landscape overview.

The FASTECH project at Bath Spa/Winchester universities used paid Student Fellows to act as change agents, co-developers and co-researchers. The students underwent considerable preparation for their role including sessions introducing them to current thinking from the research literature and to the universities' educational principles. This gave the students a much broader base than simply their own prior experience on which to draw and, in some cases, helped them see the naivety with which they had previously viewed some aspects of the process.

The success of this initiative was such that it grew from an original team of 17 Student Fellows (8 of whom were at Winchester) across 15 programmes to be established across all programmes at Winchester University with a total of 60 Student Fellows. These are being co-funded by Senior Management and the Student Union, and co-managed by the Learning and Teaching Development Unit.
and the Student Union Vice President. Across the two universities more than 1,000 students have participated in new approaches to assessment and feedback, and a proportion of these students have contributed to focus groups, video interviews and ‘think aloud’ sessions about learning from assessment.

The range of interventions implemented across the different programmes included:

- linked multi-stage cycles of tasks and reflection;
- creating more opportunities for formative feedback including peer, tutor and self-reflection;
- creating more platforms for dialogue about standards;
- clear articulation of marking and standards;
- helping students to understand and internalise those standards through various feedback mechanisms.

Student Fellow responsibilities were to work with the project team, lecturers and students to develop technology for specific assessment problems, and to evaluate its use. The Student Fellows are thus co-constructors of the research and development acting as insiders and change agents, developing an understanding of assessment principles, familiarity with technology, and research skills. The Student Fellows have worked alongside lecturers with technology; trained peers in the use of some technologies; built up a community of practice within and across the two universities and have presented at a number of internal and external and internal conferences. Some have even extended their brief to work on other areas of technology innovation (for example lecture capture in Law). The technologies used include Google Blogger, Google Drive; Grademark; PebblePad, JING and Camtasia.

This video contains excerpts from a conference run by the Student Fellows for lecturers, where the experience of listening to, and working with their peers helped them articulate the student voice in relation to assessment and feedback.

The diagram below shows Bath Spa/Winchester’s perspective on the unique qualities that students bring to the enhancement of learning and teaching.

The level of senior management support for the scheme is evidence of the benefits felt by the participating universities. The project team cannot emphasise strongly enough the value of engaging with learners and empowering students with the ability to research and innovate. ‘On FASTECH the novice-expert dynamic has been overturned. Two years into the project, we have observed and reflected on the fact that it is not us who are privileging the Student Fellows by awarding them these important roles, but rather we who are privileged because of the insights we have gained from being allowed into their worlds. Student Fellows have given us an honest insight into what goes on behind the scenes when technology is brought into the mix and how re-shaping feedback influences their confidence, self-belief, well-being, subject knowledge and collaborative skills.’
8. THE STUDENT EXPERIENCE

Given that a key driver for institutions reviewing their assessment and feedback practice is their NSS results, readers may be looking for a commentary on the correlation between programme activities and student satisfaction. The programme has looked at issues relating to student satisfaction, student attainment and the enhancement of learning but it must be recognised at the outset that they are three very different issues and the relationship between them is complex. For this reason they are addressed together under the general heading of the student experience.

'It is worth noting that enhancing learning is not about enhancing grades – although this might be a longer-term goal – but about enhancing the capacity to learn in future.' (IOE)

Manchester Metropolitan University undertook statistical analysis of a range of data from circa 17,000 cases to identify predictive factors relating to student satisfaction and attainment.

The top 6 predictors of students’ overall satisfaction (in rank order) were:

- Confidence - The course has helped me to develop confidence and skills to succeed
- Organisation - The course is well organised and running smoothly
- Explanation - Staff on my course are good at explaining things
- Advice - I have received sufficient advice and support with my studies
- Resources - University resources are appropriate to my learning needs
- Feedback - Feedback on my work helped to clarify things I did not understand

They concluded that, using a scale of 1 to 5, the two factors ‘confidence’ and ‘course organisation’ could make over 0.6 difference to the overall satisfaction score.

The factors most affecting students’ average mark (in rank order) were:

- JACS subject
- summative assessment factors (total hand ins, timing and bunching)
- entry tariff
- origin group

The MMU team concluded that, in targeting assessment burden and the provision of practical, personalised assessment information, they were pursuing areas likely to realise intended benefits of improved student satisfaction and student success. The University has reviewed and standardised many of its approaches to assessment and feedback including the number of summative assessments and policies on assignment briefs, marking, moderation and feedback to students. It has also made considerable efforts in the area of personalising information to students including making available personalised deadlines, feedback return dates and provisional marks to all students via a portal, the VLE and a mobile App.

This appears to be having the desired impact as evidenced by a marked improvement in NSS scores since implementation of the changes began (although, as we have already identified, this is not necessarily an indicator of advanced learning).
The team did however find that it was easier to develop a robust predictive model for student satisfaction than was the case for student attainment: 'We saw that bunched assessment deadlines could take the edge off students’ performances, but we know there is a lot more work to do to understand at institutional level the factors that enable students to produce their best. We anticipate that learning analytics has more to contribute to that debate ...' (MMU)

The importance of confidence building in relation to satisfaction is interesting in the light of findings from the MAC pilots: 'MAC processes help to develop students’ self-confidence, particularly the practical experience of planning, producing, and submitting a written assignment as well as receiving feedback on what they could do to improve and in what areas – all this made them feel more confident and better prepared to tackle prospective summative assessments.' (Westminster)

A message repeated many times throughout the programme is also that better communication and transparency of process, especially in relation to feedback, improves student satisfaction: 'Student dissatisfaction with feedback may arise from unrealistic student expectations that feedback should tell them what to do, as well as from unclear or irrelevant feedback. Greater transparency over feedback good practice and what is expected from both students and assessors is expected to improve student satisfaction.' (IOE). Indeed even where institutions fail to meet targets to which they have committed, students are less likely to express great dissatisfaction if the reasons for this have been communicated to them: 'as long as you communicate to students and explain why it might be a bit late, students are fine.' (Glamorgan).

In the light of these findings it is perhaps surprising that the University of Huddersfield was unable to find any statistically significant impact, either positive or negative, on student satisfaction as a result of its work on electronic assessment management (EAM). The University also looked at retention rates in one department and found that following the EAM implementation, the first year attrition rate dropped by almost 10%. There were however increases in attrition during years two and three. The University was not able to draw any firm conclusions from these results other than to consider the possibility that, whilst overall attrition was indeed lower, the changes had pushed an existing problem 'further down the line'.

The clearest evidence for changes in practice leading to improvements in student attainment comes from Queen’s University Belfast which undertook evaluation of changes across a number of different subject areas: 'In all cases where changes to assessment and feedback in individual modules were introduced as part of the project the students performed better than in previous years. This was either in terms of the mean mark or in terms of the distribution of marks, i.e. fewer fails and more students achieving higher grades.' (QUB)
In one civil engineering module where QMP was used to deliver a coursework assignment, with questions delivered in ‘batches’ with feedback at the end of each ‘batch’, there was a change in the distribution of marks with proportionately fewer fails, thirds and lower second class marks and more upper seconds and firsts (68% compared to 74%).

In a Level 2 civil engineering module a range of activities, including a workshop on marking, provision of a guide to marking and on screen provision of feedback to students, were introduced with the aim of bringing on weaker students and engaging students with assessment criteria and feedback. There was a significant difference between the mean marks and the mark distribution compared to the previous year. Proportionately there were fewer fails and third class marks and more first class marks following the interventions. A significant conclusion was that students who participated in the workshop were less likely to make errors in the final submission.

The summative assessment in a Level 3 civil engineering module was changed from 100% exam to 90% exam and 10% coursework with the coursework element involving peer review using Peer Mark. Only one student failed the module compared to 8 in the previous year and there were proportionately more second class marks and fewer third class marks.

The use of QMP to deliver formative MCQ activities in a Linguistics module resulted in an increase in mean mark from 66% to 70% in that element of the assessment and this change is attributed to students having the opportunity to try formative activities a number of times and receiving immediate feedback. A student commented: ‘Fast feedback’s really important in phonetics. You need to establish good habits from the start’, ‘We know immediately how we’re doing’ and ‘it’s the way to go. Definitely’.

9. ACCESSIBLE ASSESSMENT AND FEEDBACK

Accessibility and inclusion have been important values to be embedded in revised assessment and feedback practice throughout the programme. The technologies employed by the projects incorporate many features that can improve accessibility such as:

- The use of online feedback to aid in the readability of feedback for all students.
- The use of audio feedback to aid students with dyslexia or those for whom English is not their first language.
- The use of the accessibility functions within QuestionMark Perception.
- The use of mobile devices to widen participation in online assessment and feedback.
- The potential use of AccessApps, such as text to speech, to support the delivery of feedback.
- The use of diary facilities to aid time management.

The University of Hertfordshire’s guidance on implementing its assessment for learning principles features some excellent advice on ensuring practice is genuinely inclusive in line with its aim of supporting personalised learning and there is more on the topic in the University’s curriculum design toolkit. It recognises that meeting the needs of a diverse student body goes beyond ensuring that students with disabilities are not disadvantaged and looks at ensuring assessment and feedback practice is culturally inclusive (e.g. bearing in mind religious observances in relation to the timing of assessment) and allows each individual learner to bring their own perspectives and experiences to bear (e.g. ensuring assessment can draw on students own personal experiences where appropriate). Key tips include:

- identifying where possible a variety of assessment methods that could be used to test particular learning outcomes;
- ensuring that an assessment strategy includes a range of assessment formats;
- ensuring assessment methods are culturally inclusive;
- identifying times that are appropriate for most students and avoiding those, where possible, which are difficult.

The University of Hertfordshire has also produced specific guidance on accessibility and inclusivity in relation to the use of electronic voting systems. This technology was deemed less than accessible by some students indicating that, despite many accessibility benefits, technology does not always improve accessibility.

The University of Glamorgan has reported that use of its Assessment Diaries increases the ability of students with specific learning requirements to manage their time and that the provision of online feedback via Grademark is particularly valuable for students with specific learning requirements as it
facilitates the revisiting of assessment feedback in a central repository that students can call upon in an accessible way. It also facilitates the monitoring of student achievement by study support tutors who can access an overview of students’ completed assessments and feedback.

10. CHOOSING THE RIGHT ASSESSMENT

A concern at the outset of the programme was the extent to which common practice remained firmly rooted in traditional approaches that concentrated on assessment of, rather than for, learning. Awareness, and understanding, of the full range of assessment forms appeared to be limited amongst many academic staff and very often only summative assessment was incorporated into formal institutional procedure. Institutions were however reporting pressure from students to use a wider range of assessment types especially when they were aware that this was happening on similar courses in other institutions.

The programme has seen considerable emphasis on assessment for learning, learner longitudinal development, assessments that reflect the world of work and enhance employability and ipsative assessment (a form whereby feedback acknowledges progress against the learner's previous performance regardless of achievement: see Hughes et al 2010). There now appear to be compelling reasons to ensure that each institution is aware of, and makes effective use of, a range of assessment types:

- ensuring assessment supports formative development
- ensuring that assessment practice is inclusive
- ensuring that assessment prepares students for the world of work
- responding to student legitimate expectations
- ensuring that practice is both effective and efficient to deliver in resource terms

A number of the tools developed through this programme are available for use by other institutions:

- Manchester Metropolitan University guidance on assessment design which looks at different assessment types and the circumstances under which they may be effective.
- The University of Nottingham has developed an open source assessment delivery tool, known as Rogō, that can be used for both formative and summative assessment online. The product is scalable, secure, re-useable and extensible and is already in use in a range of partner universities.
- Kingston University Uniqurate project has produced a user-friendly authoring tool to develop online assessment material that complies with the QTI 2.1 open standard. This means the resources are readily transferable to a variety of delivery platforms unlike e-assessment content developed in commercial the VLEs or tools such as QuestionMark Perception. The Uniqurate tool avoids the need for technical expertise and provides the means to create complex, adaptive resources that go far beyond multiple choice. The tool can be used for both formative and summative assessment.
- The University of Glasgow, QTI Delivery Integration project created an open source assessment player that supports an unusually wide range of standardised item types to be integrated into most VLEs. The QTIWorks software is packaged along with the documentation needed by technical staff to deploy the software and user manuals for staff and students.
- The University of Hertfordshire has produced an assessment resource calculator to enable judgements about appropriate assessment methods to be viewed in the context of both staff and student effort. The tool helps staff identify the time associated with each component of the assessment process from writing the assignment brief to marking and giving feedback. Exemplar comparisons have been produced to demonstrate the potential impact of different assessment approaches. The tool is freely available to download and is accompanied by a video guide.

Analysis using the tool suggests that the number of students for which setting an objective test becomes more time efficient than setting an essay is around 15 students. Generalisations such as this could be a useful starting point for programme teams considering assessment strategies in relation to the design of curricula. The University of Hertfordshire does however note that: ‘It [the resource calculator] is a very
useful tool but must be used in the context of a bigger discussion about what constitutes good assessment design and for us that will include reference to our Assessment-for-Learning principles.'

11. MANAGING RISK

Approaches to, and management of, risk were identified as important issues across the projects. Some risks, especially related to the use of technology, are very real but there is however a general, and considerable, risk aversion when it comes to ‘tinkering with’ assessment and feedback practice and this applies to staff and students alike.

Project teams bemoaned the ‘2:1 Syndrome’ whereby students are obsessed with their final mark and this has an impact on matters such as the choice of assessment format and adoption of new technologies. Whilst a reluctance to be experimented on as a student is understandable, some students are very good at ‘playing the assessment game’ in order to achieve the desired classification and become very vocal when any change in practice threatens their tried and tested approaches. Academic departments tend to want to minimise complaints and this puts pressure on individual tutors not to stand out as being too challenging. Academics are wary of their module being singled out as one that can be pointed to and shown to have brought down the overall average.

The emphasis on student centred-ness and the student as customer can be a doubled-edged sword in this regard and may give good teachers even less reason to innovate than others: ‘There is perhaps a negative side to this focus, in that it shifts the balance of power in some cases on to the students and away from the academics, so that if a module currently receives positive feedback there is little incentive to attempt any form of improvement.’ (University of Exeter). Similarly, as noted in section 8, what is popular with students may not always be the same as what provides most academic benefit.

The most effective means of tackling these issues seems to be by increasing transparency. The universities of Bath Spa and Winchester found that in working with Student Fellows an important first step was to make the whole assessment process as transparent as possible: this allowed students to see the reasoning behind the process, to understand the difficulties and complexity and, most importantly, it also helped them see assessment and feedback as a participative and developmental activity realising that the process as a whole was about much more than the final mark. This is interesting in view of anecdotal evidence from other institutions that academic staff continue to emphasise high-stakes assessment due to a fear that students will not engage with formative/developmental assignments. Manchester Metropolitan University had to address such concerns in reducing summative assessment to assignments to enable students to respond better to feedback and similar thinking lies behind the development of the PDP module/patchwork text activity at Dundee.

The projects have learned lessons about managing expectations, and hence risk, about what is achievable via software products that are outside their direct control and about working with third party suppliers (see the report from the University of Exeter OCME project discussed in section 12). There
have also been lessons learned about the criticality of assessment technologies and the need for absolute robustness. There have been some technology failures (sometimes down to inadequate staff training) in relation to summative assessment that have caused considerable stress to students required to resit the assessments. Lessons learned from widespread piloting of EVS have led the University of Hertfordshire to realise the immediacy of feedback offers great benefits in relation to formative assessment but that the risk/benefit profile is considerably different for summative assessment. Queen’s University Belfast has similarly used QMP for student diagnostic testing and formative assessment only (and has noted reporting issues that need to be addressed by the system supplier).

Overall, the education sector has lagged behind many others in terms of creating an effective digital environment partly due to a level of change resistance and clinging to ‘traditional values’ that appears to be endemic in the sector but partly also to the immaturity, and lack of interoperability, of some of the tools available to support its, often necessarily complex, business processes. Furthermore, in a relatively risk averse culture, assessment practice is very definitely one of the high risk areas when it comes to changing practice. It appears that we are now in a situation where a range of factors such as economic circumstances, maturity of available technologies and student expectations mean that the time is ripe for change but that many institutions are still seeking ever more compelling evidence that the benefits outweigh the risks the University of Huddersfield describes the implications of this situation:

‘Senior managers in HEIs are keen to adopt new strategies for managing assessment, but many feel reluctant to do so because of the perceived risks involved. Key amongst these risks is the concern that implementing EAM strategies will invite strong resistance from academic staff and that a system which is not reliable and/or robust will generate distrust and dissatisfaction amongst students. Lesser amongst the risks, but which are nevertheless significant, are training, procurement and data management issues; these all bring with them potentially significant costs as well as risk. In terms of training, concerns that students will struggle with electronic submission systems remain high. So, while institutions are keen to adopt EAM strategies as quickly as they can, many are also feeling hesitant to do so. This leaves institutions running the risk of finding themselves constantly stalling or, alternatively, developing radically over-engineered solutions which are more cumbersome, costly and inflexible than they need to be.’ (Huddersfield)

12. MANAGING ASSESSMENT AND FEEDBACK

There are a host of core institutional processes covered under this general heading of managing assessment and feedback. Manchester Metropolitan University has produced a high level model of the assessment lifecycle that has been helpful in supporting its institution-wide review of policy and process.
At a more detailed level the processes also include: assessment scheduling; submission of assignments; tracking of submissions; extension requests and approvals; academic integrity; academic misconduct processes; examinations; marks recording; moderation and external examining.

The institutions in the programme have been undertaking a range of improvements to the business processes that support assessment and feedback. Some of these policy changes and process improvements are not related to the use of technology but many of the most significant developments are indeed technology supported. In this report we make reference to the term electronic assessment management (EAM) which is increasingly being used in the sector (although the term electronic management of assessment or EMA is equally common).

In a world where routine administration is increasingly being carried out online, it is hardly surprising that we are starting to see an expectation that universities and colleges will have effective information systems underpinning these core business processes: ‘Amongst students, there is very strong evidence to suggest that not only is electronic assessment management their preference, but that those who come to appreciate its attendant benefits then begin to see electronic assessment as their entitlement.’ (Huddersfield)

It should however be noted that the apparent tardiness of the education sector in moving towards conducting its core business effectively in a digital environment is not solely due to culture. Unlike many aspects of learning and teaching, where technological affordances have sometimes outstripped our ability to make use of them, the tools available for many aspects of curriculum management have long been a source of concern for those wanting to innovate. Scalability, usability and integration of commercially available tools are issues that have come to the fore. The current generation of tools is probably the first to offer a realistic prospect of creating end-to-end support for the assessment and feedback process.

Considerable technical advances have been made over the life of some of the projects that fed into this programme. The University of Westminster MAC approach was initially supported by a stand-alone, open source tool: ‘E-Reflect was developed because neither the test or survey tools in VLEs provided the capabilities (feedback without marking) or work flow (e.g. email alerts to tutors when students complete a reflection) that were required by the MAC framework.’ (Westminster). The stand-alone nature of the development allowed the university to deliver the functionality it desired at the time but proved to be a barrier to adoption in other institutions. The tool was later re-developed to the Learning and Teaching Interoperability (LTI) standard allowing for its integration with common virtual learning environments (VLEs). In a parallel development the University also worked on a tool called Feedback+ which has now been delivered as a cloud based system that can be scaled readily according to demand across institutions.

The University of Huddersfield EBEAM project report includes a useful comparison of many of the EAM tools on the market including: the GradeMark and originality checking tools within the Turnitin suite; SafeAssign; Assignment Handler; ReMarks PDF and ReView.

Despite many success stories (notably the work at the University of Huddersfield reported here and in Ellis 2012, 2013), an institution wide approach to electronic assessment management is still no easy thing to achieve. The University of Exeter attempted to introduce an end-to-end coursework management solution which would be completely paper-free and supportive of administrative processes, academic pedagogy and the student experience. The evaluation report from the OCME project represents a thorough and honest analysis of the complexity of such an undertaking and there are many lessons to be learned for other institutions about working with an external supplier to deliver a system to meet the needs of a large and diverse group of stakeholders. Possibly the most important observation from the project is that the diversity of business processes across the different colleges was a much bigger issue than any inherent resistance to the use of technology. Ultimately the University was only able to deliver a pilot with part of the desired functionality rather than an institution wide roll-out with all of the desired capabilities.

The evaluation also revealed some interesting differences in perception particularly as regards how professional or central service staff viewed the potential benefits of EAM as compared to the perceptions of academics. The project team notes: ‘Almost all professional staff saw clear benefits, while only half of the academic staff saw any benefit. Academic staff felt that administrators would be the main beneficiaries with students seeing some benefit. Professional staff, however, saw students as the main beneficiaries.’ (Exeter) Such perceptions are interesting and obviously need to be explored further in any...
change management strategy particularly due to the opportunities afforded by EAM to remove low value administrative tasks from academic workload.

The University of Huddersfield emphasises the importance of what it terms 'role clarity' in designing workflows and specifically to distinguishing clearly between roles that are administrative and therefore require administrative skills, and those that require academic judgement and therefore must remain the responsibility of appropriately qualified academic staff. The design philosophy at Huddersfield is to move as many duties as possible from academic members of staff onto administrative members of staff. The University also notes: 'Similarly, any role or duty which can automated and therefore be taken away from staff altogether is equally important. The principle here is that if you can get a machine to do it, get a machine to do it.' (Huddersfield).

12.1. IMPROVING TRANSPARENCY AND CONSISTENCY

In the section on supporting feedback and feed forward we have looked at the importance of open discussion and analysis of the feedback given by academic teams and in the section on improving longitudinal development we have looked at how the sharing of student feedback across programme teams can help academics better support those learners. There are also benefits be gained from improving the overall transparency and consistency of assessment and feedback processes. Indeed during our baseline survey work senior managers frequently identified lack of consistency across their institutions as a major cause of concern and of likely challenge by students.

A number of institutions, including the University of Glamorgan and Manchester Metropolitan University, have standardised their approaches to certain aspects of assessment and feedback by providing templates and rubrics. The University of Hertfordshire has produced an exemplar set of grading criteria to help ensure consistency of approach.

The University of Huddersfield found that students who had their first experience of feedback being presented through an electronic rubric found this compared very positively with previous feedback experiences where lack of clarity about the marking schema led to feelings of bewilderment and frustration. Student comments included:

‘You just sort of get a random mark really.’

‘To get a first you have to do everything for a 2:1 but do something slightly better.’;

“We’re not lecturers, none of us are, we don’t know what lecturers are looking for and the only person who’s gone even half way there telling us what lecturers are looking for is [tutor] with the rubric.’

(Students, University of Huddersfield).

There were similar findings at the University of Westminster in relation to educating students about the expectations of HE level study: ‘For many students, learning to use assessment criteria in the planning of an essay was a key outcome of their experience’ (Westminster)

The University of Dundee recognises the value of clarity around criteria and standards but notes that tutors’ evaluative judgements are also based on a considerable amount of tacit knowledge: ‘... tutors develop an internal calibration for quality and comparability. Although assessment criteria and standards are an attempt at defining what is expected to students, they cannot fully communicate such tacit knowledge.’ In order to counter this they suggest that students need to be given the opportunity to take part in the process of making academic judgements to help them develop appropriate evaluative expertise themselves. This approach is recommended by many other institutions and is covered in the University of Hertfordshire's guidance on implementing its principles of assessment for learning e.g. they suggest that learners should: ‘Engage in peer assessment opportunities so that students have the opportunity to be involved with the assessment criteria e.g. through activities in the classroom that engage students in reviewing the assessment criteria formatively.’

Manchester Metropolitan University has gone further than most others in trying to implement a consistent approach to assessment and feedback institution-wide in order to ensure parity for all of its learners. As part of an undergraduate curriculum change programme, the University decided to standardise the credit size of modules (30 credits) and limit the number of summative assignment tasks per module to 2. This decision was taken in response to continued student feedback that there were too many assessment points: up to 20 in a year for some students. The change resulted in a maximum number of summative assignments per student of 8 per year, including examinations. The change was supported by the
implementation of a consistent template for assignment briefs and a consistent set of grade descriptors and assessment criteria as well as an institution-wide deadline of four weeks for the return of feedback.

The University of Westminster has also seen a drive to address over-assessment through course review and the number of summative assessment instruments has been reduced to two per 15 credit module with an increased emphasis on the number of formative assessment opportunities.

The practice of publishing feedback deadlines to students can have the added advantage of avoiding tutors having to respond to a lot of emails from students querying when feedback will be available. The University of Huddersfield, which has also implemented published deadlines, noted: ‘While academic staff may not uniformly welcome this increased level of awareness and surveillance on the date of return for their marking, the heightened exposure of the date of return to both their students and their line managers almost certainly results in more academic staff meeting it.’ (Huddersfield)

The increased transparency created by some of the changes brought about during the course of this programme has highlighted a phenomenon common in the sector notably the persistence of ‘institutional myths’ surrounding policy and process. The tendency to do things the way they have always been done is perpetuated by a belief that this is somehow enshrined in local or institutional policy. When challenged on an existing approach, academics were often surprised to find that many characteristics of the process were matters of historic choice rather than regulatory issues and, indeed, surprised at how few regulations there actually were. Variation in the application of assessment policy across an institution is often down to such myths about what actually constitutes the policy in the first place.

12.2. E-SUBMISSION

The University of Huddersfield has undertaken research into student views on e-submission and found the results to be overwhelmingly positive. Whilst some students with no previous experience of such systems were apprehensive prior to making their first submission, all but 3% were able to do so successfully and confidence levels grew with increased familiarity. This is interesting in the light of previously voiced concerns by senior management that many students may struggle with the system and the project team noted: ‘Our conclusion was, therefore, that it would be disproportionate to invest excessive time or energy in mandatory training for all students in the eSubmission process prior to their first submission. The majority of students in this study simply did not need it.’ (Huddersfield)

Reported benefits of online submission for students include:

- convenience of not having to travel to hand in work
- avoidance of printing costs
- time saved and avoidance of anxiety around work submitted via the postal system
- automatic proof of receipt
- confidence in the safety and security of the system
- the confidence of knowing their work was backed up
- clarity about turnaround times for marking
- realistic timing of submission deadlines (11.59 pm deadline at Huddersfield)
- increased privacy when marked work is returned electronically
- a sense that this is simply normal practice in a digital age

A minority of students, often those without Internet access at home, expressed a preference for hard copy submission. The University of Huddersfield noted: ‘Those students who found the process challenging or difficult were nevertheless aware that moving onto an EAM approach makes sense and is the way of the future. There was a clear sense from these students that they needed to take responsibility for developing their skills to cope with this changing world.’ The University also suggested that, for these students, couching their engagement with the tool in ways that emphasises the importance of it to their professional development is likely to offer appropriate motivation.

E-Submission via Moodle became institutional policy at the Institute of Education from early 2013 as a result of its Assessment Careers project.

At Queen’s University Belfast the school of English moved to e-submission (and marking see below). The move was well received by both students and staff and is calculated to have saved 20 working days per year in administrative staff time (in a school with c.900 students). This time would have been spent receiving, processing, distributing and filing away students work throughout the academic year. The
approach is now being adopted in other schools. At the University of Huddersfield a time and motion study revealed that an administrator with a student load of 1,620 students saved 137 hours per year or 3.7 weeks based on a 37 hour working week. A similar reduction in administrative workload has been reported at the University of Glamorgan where most submission is now electronic.

At the University of Dundee as a result of the EFFECT project, time saved through e-submission and e-tutoring works out at c.20 mins per assignment submitted. There has also been a shift of basic administrative tasks away from academics to administrative staff e.g. acknowledgement of assignment submission. The centralised e-tutoring approach has also generated further efficiencies in that tutor time spent responding to emails is 60 minutes per week as opposed to 176 minutes on a similar programme that does not employ the system.

As well as resulting in efficiency savings, some institutions have noted a qualitative difference in the administrative tasks required to support assessment and feedback processes with the automation of some previously manual processes freeing up time to engage in more value added support roles: ‘... the tasks that have been removed from the duties of administrative staff because of EAM are those that were particularly repetitive and therefore boring. These include date---stamping, logging and distributing assessment work. ... The time that has been saved has also meant that administrative staff can be redeployed to do tasks that can offer extra support to students and academic staff. For us, this has included monitoring student assessment submissions and contacting students who have not submitted to encourage them to do so.’ (Huddersfield)

12.3. ONLINE MARKING

The issue of online marking has polarised academic staff for a number of years but, whilst this situation appears likely to continue for some time, the programme has seen some large scale shifts in attitude and widespread moves towards online marking. The pattern of developments at the Institute of Education: a move to online submission, followed by an anticipated move to online feedback with online marking left to the discretion of individual academics for the immediate future is a common and logical one and fits with the sector's attitude to change. The mounting evidence for the increased effectiveness and efficiency of online marking may however prompt more directive approaches by institutions in the near future.

The most in-depth study of online marking to date comes from the University of Huddersfield EBEAM project which undertook a detailed analysis of staff attitudes to the topic and effective approaches to encouraging different types of staff to adopt new working practices. Their work is discussed more fully in the Jisc infoNet Change Management infoKit. The discourse of resistance appears to be highly personalised e.g. some older members of staff may cite eye-strain as an issue with online marking whereas others of the same age group would cite the affordances of technology to adapt to their personal needs and make reading easier. In relation to reluctant staff the University notes: 'It is also important to allow them to justify their decision to move to eMarking in ways that make sense to them and help them maintain their sense of identity and agency.'

The University of Huddersfield concluded that a strongly directive approach is likely to be counter-productive and that academics should be allowed to continue working in the way in which they feel most comfortable whilst the institution continues to emphasise the benefits of e-marking and reward those adopting the practice through a reduction in administrative duties: ‘... it is important to build a strategy and a system which provides each group with the support they need but also offers rewards and applies pressure in a consistent way such that moving away from paper---based marking and into eMarking makes the most sense to as many of them as possible.’ (Huddersfield)

Queen's University Belfast took a similarly non-directive approach combining appreciative inquiry with demonstrating the benefits of the application of technology. Their experience does however show the powerful message that can be transmitted when reluctant users of the technology experience the benefits. Online marking was initially piloted across three modules in a single school as a result of which the school took the decision to move to fully online marking in the following year. Pivotal in the decision were the views of one academic who was strongly reticent prior to participating in the pilot but found the experience very positive. The consequences of this were extremely far-reaching with two further schools subsequently adopting the practice. 'The implications of this are that staff sharing positive experiences can be a powerful means of bringing about change in practice and process.' (QUB).

Reported benefits of online marking for academic staff include:
- the convenience of not having to collect and carry large quantities of paper
- the convenience of electronic filing
- the security of having work backed up on an online system
- the ability to moderate marks without having to physically exchange paper
- the increased speed and efficiency of being able to reuse common comments
- improved morale through not having to write out repeated comments
- the convenience of being able to undertake originality and plagiarism checking in the same environment as marking
- improved clarity of marking and feedback (especially the ability to include lengthy comments at the appropriate point in the text)
- improved consistency of marking

The issues relating to improved clarity (particularly not having to decipher handwriting) and consistency as well as the security and convenience of the medium are also the main benefits to students.

Whilst it can take time for staff to familiarise themselves with the system, there is a clear message that, after this initial period, marking becomes a much faster (and more satisfying) process than the traditional approach. 'The vast majority of the staff interviewed for this study reported that using GradeMark made their marking faster and/or more efficient. What this meant in practice was that they were able to offer the same amount of feedback than they had previously in less time or that they were taking the same amount of time but were able to offer considerably more feedback in terms of both detail and quantity.' (Huddersfield). Pilot activity at the universities of Bath Spa and Winchester produced similar outcomes.

The University of Huddersfield noted that the time saving didn’t just come from the marking process itself, but also accumulated from other administrative burdens that had been reduced or removed as a result of using the tool: 'I can actually spend more time writing comments than I am spending emailing students back or all those other things.' (Huddersfield)

The University of Glamorgan reported the same global efficiency savings but noted that many academic staff were unlikely to reflect on the bigger picture of the overall process: ‘... academic staff seem to make a direct comparison between the time taken to mark a physical script and to mark online and the speed of the system. They were less aware of the saving of time on the entire feedback process, which involved tracking student submissions, or using lecture time to hand back assessments or having multiple interruptions from students collecting marked work at different times.’ They did however cite one academic who had clearly recognised this: ‘I think the whole process is quicker. We used to rely on the faculty administrators to collect the work and then we have to collect them a few days later and ask the student to come and collect their work. With Turnitin the whole process is a lot quicker. Students do not lose their work. Whether the “marking” is faster I think depends on each individual and it will be different. But the whole process is definitely quicker.’ (Glamorgan)

The efficiencies in the overall process are illustrated by these two diagrams from the University of Huddersfield: the first shows the process of marks entry using paper based marking and requires academics to duplicate the same procedure three times and to undertake individual handling of student marks (i.e. enter the marks one by one three times);
the second shows the marks entry procedure available to staff marking on Grademark. There is no duplication of effort for the academic and marks are entered via batch handling. Even without being able to see or understand the fine detail of these workflows, the increased simplicity and the reduction in steps and processes is clear to see.

The University of Huddersfield noted that few academic staff required basic training to undertake e-marking and that the self-paced training tools available within the system were adequate for most users of average technical ability. The University suggests that training effort is better spent on more advanced features and supporting staff to share experiences both to support the working round of problems that exist in specific disciplines and to improve consistency.
Increased use of online marking is not simply an unstoppable trend: growth in recent usage also reflects the increased maturity and user-friendliness of the available tools. For example the latest release of the most commonly used tool, Grademark, incorporates integration with plagiarism detection features such that a tutor marking a piece of work can see elements identified as 'unoriginal' subtly highlighted in the background. It also incorporates features such as audio as well as written feedback and the ability to see whether or not a student has looked at their feedback. There are however still many issues to be overcome such as the marking of assignments requiring the use of mathematical and scientific formulae or musical notation and the marking of assignments that cannot be 'submitted' through the system such as performances.

Developing maturity in the field of assessment analytics (see section 13) may make the case for online marking even more compelling in future.

13. **ASSESSMENT ANALYTICS**

Various types of data analysis were used to support the work of the projects, in particular at Manchester Metropolitan University where there was considerable use of curriculum information and data from large scale student surveys. The University of Huddersfield explored the potential of assessment data to contribute to the evolving field of learning analytics. The University noted that: ‘Assessment analytics has the potential to make a valuable contribution to the field of learning analytics. This is because, as far as students and teachers are concerned, assessment is both already ubiquitous and very meaningful. All students are, and expect to be, assessed and all teachers are already involved in marking student work.’ but noted that there is little reference to the value of assessment data in current research. The University puts this down to the fact that to date it has not been possible to collate the information at a sufficient level of granularity but that the advent of electronic submission and marking systems now makes this a more viable possibility.

After seeing the impact of some analytics data presented to a particular group of students ‘on a whim’ by their tutor, the University conducted some evaluative research. The ad hoc experiment had indicated that the graphical presentation suddenly gave students a different insight on issues that had been pointed out to them regularly in previous feedback in what was described as: ‘Groundhog Day when the same errors and weaknesses return time and time again.’ It was concluded that: ‘...there was something about the way this analytics data had been presented in graphic form, and further there was something about how it had allowed not just the tutor but also the students to see a bigger picture, that made it substantively different ...’ (Huddersfield)

In the formal evaluation, prior to undertaking an assignment, a group of students was given a screencast showing the data for that assignment undertaken by a previous cohort. An accompanying analysis focused on common errors and the rubric results (which mapped student achievement against the assessment criteria for this assessment task), which graphically demonstrated where students lost or gained most of their marks. The group then undertook the assignment (the assessment criteria and task being unchanged from the previous iteration).

The day after their feedback was received the students were invited to a workshop where they completed a self-reflection that prompted them to reflect on their performance and their perception of how it sat in relationship to the cohort as a whole and were then shown anonymous data that allowed them to identify where they were actually placed in relationship to the cohort as a whole in a similar format to the previous screencast. The students then completed further reflection based on the data they had just seen.

The outcomes were similar to the previous experiment in that students gained a greater sense of clarity and felt better able to focus on key issues that needed attention. This appears to have occurred across the full spectrum of students with even those who gained high marks feeling motivated to concentrate on specific areas. For the University this emphasises the benefits of students as well as staff having access to a bigger picture: ‘This stands in marked contrast to the bulk of their engagement with assessment results which is for the most part a one-to-one interaction with their tutor and comparisons they are able to make within their immediate friendship circle. This will at best give them a partial sense of where they sit in relationship to others and at worst will give them a number and degree classification against which they have little or no point of reference to compare it beyond that which they have received in the past. While this offers them a clear sense of their ipsative and iterative development, it doesn’t allow them to identify where they sit in relationship to others.’ (Huddersfield)
The University goes on to say that: 'We cannot expect students to develop and ‘calibrate’ their self-evaluation skills if we don’t give them access to the ‘big picture’ of student results as a whole. Without this background information, students will always struggle to fully understand what their grade means.' (Huddersfield)

It was noted that this exercise, although entirely anonymous, was emotionally difficult for many students but: 'The students did agree that, despite the emotional difficulties they experienced, the process of seeing the results as a whole was useful to them.' The University noted the importance of ensuring that students are properly supported in making use of this type of information: 'Simply providing the data (in the form of a dashboard) is unlikely to be effective unless students are offered training in its interpretation and accessible strategies to act upon it.' (Huddersfield).

This accords with findings at the University of Hertfordshire which has been piloting a Student Progress Dashboard (follow this link to see the design principles underlying its development). The initiative was generally well received by both staff and students and thought to have considerable potential but it was recognised there were aspects of the presentation that could be open to misinterpretation by students. The University decided to phase the rollout making it available to programme teams first a.) so that academics became sufficiently familiar with the dashboard to properly support students and b.) In order to make some changes to the student facing content and add appropriate signposting for support and resources.

The University of Huddersfield notes an added impetus to develop capability in using assessment analytics in that in FE colleges, and teacher education within HEIs, Ofsted places an additional burden of care upon institutions to closely monitor progression and achievement and to use that data as part of the planning cycle.
14. SUMMARY

The programme set out to review one of the most fundamental aspects of the higher education experience and the landscape review showed that the problems faced by the participating institutions were typical of the sector as a whole. This fact, coupled with the scale of engagement with the programme (over 2,200 staff and 6,000 students directly engaged in projects), suggests that the programme findings are applicable to the wider sector.

The projects have addressed some issues that go to the very heart of the learning experience and have found effective means of engaging stakeholders in productive dialogue about difficult matters that have long tended to polarise views. The approaches they have taken to managing change are interesting and informative in themselves and are addressed separately in an update to the Jisc infoNet Change Management infoKit.

The discourse around underlying educational principles and values has been a strong unifying factor for many projects. It has enabled them to reconcile quite disparate views and, having achieved agreement on what they actually want to achieve, it has become easier to establish whether or not a particular technology can help enhance the current situation. The projects have also been able to draw on a sound evidence base, through data such as that derived from feedback audits, with which to question and challenge current practice.

The projects have shown that large scale institutional change is possible and that it is possible to deliver parity of experience for learners without compromising values held dear by particular academic disciplines. Most significantly, they have produced considerable evidence that appropriate application of technology can deliver significant efficiencies in terms of automating routine administrative tasks and can do so at the same time as delivering a more effective learning experience.

The programme addressed aspects of the higher education experience that are notorious for being 'stubbornly resistant to change' and the adoption of practices that are learning centric and support effective longitudinal development can be said to be truly transformative. The programme has not delivered a magic formula that will transform institutions overnight but it has provided an evidence base, examples of good practice and a set of tools and resources that can allow all of the providers in the sector to significantly enhance their own practice in ways that are appropriate to their own particular context. Appendix 1 of this report draws the lessons learned about some of that good practice into a checklist that institutions can use to begin that dialogue and start their own journey of assessment and feedback transformation.
15. **FURTHER READING AND REFERENCES**

The reader is referred to the assessment and feedback pages in the Jisc Design Studio for a more comprehensive overview of current work on assessment and feedback and outputs from related projects. The Jisc publication ‘Effective Assessment in a Digital Age’ also illustrates some of the many excellent examples of good practice that already exist.

Queen’s University, Belfast has produced a literature review which synthesises the pedagogic literature on assessment and feedback. The work is still in draft form but provides a very useful overview.


Ferrell, G. (2012b) Moving out of base camp: an update on key themes from the Jisc Assessment and Feedback programme. Available at: [http://repository.jisc.ac.uk/5082/](http://repository.jisc.ac.uk/5082/) [Accessed 28th September 2013]


Nicol, D. 2011. *Developing the students' ability to construct feedback*, Published by the Quality Assurance Agency for Higher Education, Available here http://www.enhancementthemes.ac.uk/pages/docdetail/docs/publications/developing-students-ability-to-construct-feedback


APPENDIX 1: CHECKLIST FOR INSTITUTIONAL SELF-ASSESSMENT

1. Strategy and policy
   - Is your institution’s approach to assessment and feedback articulated in institutional strategy and, if so, at what level institution-wide or devolved?
   - Is your assessment and feedback strategy underpinned by educational principles?
   - What guidance exists to help staff apply the principles in practice?

2. Academic practice
   - Does your institution use consistent templates for assignment briefs, assessment criteria, marking rubrics etc?
   - How and when do academic staff e.g. programme teams discuss and compare approaches to feedback?
   - Does your institution use any audit tools to analyse tutor feedback?
   - How do part time teaching staff develop an understanding of the programme wide approaches to assessment and feedback?
   - What opportunities are there for student/tutor dialogue around feedback?
   - Are academic staff able to view past feedback for a particular student?

3. Learner engagement
   - How are students inducted into assessment and feedback practices and encouraged to develop assessment literacy?
   - What mechanisms for learner self evaluation are promoted and supported?
   - What mechanisms for learner peer evaluation are promoted and supported?
   - How are learners involved in dialogue around developing assessment and feedback practice?
   - Do students have access to personalised information about assessment and/or feedback deadlines for submission and/or returned work?
   - Are students able to view all of their past feedback in one place?

4. Curriculum design
   - Does your institution have any policies relating to the number and type of assessments per module/course?
   - Are learning outcomes for specific modules and courses mapped to scheduled assessments?
   - Does your institution use any modelling tools to look at the balance of formative/summative assessment and the scheduling of assessments across modules and courses?
   - Does your institution have a full overview of its assessment activity and the implications of submission peaks on administrative support and IT systems?
   - Does your learning design implement educational principles e.g. ‘Help clarify what good performance is’ in a teacher centric or a learning centric way?

5. Employability
   - Does your institution use a range of assessment types that mirror actual working practices in the relevant discipline?
   - Is the development of student self and peer evaluative capability valued as an important attribute of employable graduates?
   - Does your institution involve employers in determining what should be assessed?

6. Processes and technologies
   - Does your institution have a policy on online submission and/or feedback/marking?
   - Does your institution have consistent processes relating to the submission, marking and return of assessed work?
   - Do staff have ready access to information about available technologies and ways in which they can support assessment and feedback practice?
   - Are students able to employ an appropriate range of technologies in producing assessed work?