Catalyst Fund: Small-scale projects in experimental innovation

Supporting student agency and success in higher education and beyond through the development of assessment feedback skills (the ability to self-monitor and self-evaluate). Office for Students' Experimental Innovation Report Report. Southampton, University of Southampton

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Overview

The aim of this project was to explore how a holistic authentic assessment feedback framework could support students' development of self-evaluation skills. This approach was informed by an explicit and shared understanding of what constitutes effective assessment feedback (Evans, 2013) using a self-regulatory interdisciplinary assessment framework (development of cognitive, metacognitive and emotional regulation of feedback: EAT, Evans, 2016) underpinned by an inclusive pedagogical approach (Waring & Evans, 2016).

Our research was interdisciplinary involving colleagues from across six faculties working in partnership to design innovative feedback interventions underpinned by the EAT Framework using a form of action research. A number of tools to measure student' development of self-assessment were trialled including the EAT Framework scoring wheel, an assessment literacy scale, a feedback orientation scale. On-going professional development and evaluation were features of the project.

Using EAT as an underpinning guiding framework to the interventions, statistically significant increases in students' assessment literacy, their feedback orientations,

performance, satisfaction, and overall engagement were identified for those students who engaged in the projects. However, this was not the case in all projects; there were variations in outcomes within and between projects highlighting the role of individual differences in learning, underlying curriculum design; staff access and involvement in the training and support sessions offered, and the nature of the interventions themselves. Key gains included the refinement of tools to measure impact; professional learning accrued through involvement in the project. Key sustainability outcomes included: innovations becoming embedded within curriculum design; identifying where changes were needed within existing modules/programmes; building student/staff partnerships. Six of the original fourteen colleagues have gone on to lead further projects having developed expertise from engagement in this intervention. The most significant gain has been in building an enhanced understanding of pedagogy. The team involved are strongly engaged in our university-wide Researching Assessment Practices community of practice strategy and have played a key role in disseminating key learning points from the project.

Key themes/keywords: Assessment and Feedback; EAT Assessment Framework; self-evaluation; professional development; self-regulation; community of practice; inclusion

Background

This project aimed to support undergraduate students' development of assessment feedback skills; these high level skills are essential in supporting students' effective learning transitions into and through HE, and into employment; as part of this the development of emotional regulation skills are crucial in supporting student access to learning. We explored

how holistic authentic assessment feedback design might best supports students' development of self-evaluation skills. This approach was informed by an explicit and shared understanding of what constitutes effective assessment feedback (Evans, 2013) using a self-regulatory interdisciplinary assessment framework (development of cognitive, metacognitive and emotional regulation of feedback: EAT, Evans, 2016) underpinned by an inclusive pedagogical approach (Waring & Evans, 2016). We adopted a pragmatic approach that sought to develop curriculum innovations from interdisciplinary research and interdisciplinary professional practice.

Ours was a pedagogically driven theory-informed innovative project employing world-leading research on holistic authentic assessment feedback design. The EAT self-regulatory framework is underpinned by a Personal Learning Styles Pedagogy approach (PSLP, Waring & Evans, 2015). This makes it cutting edge; it draws on the latest research in neuroscience, education and cognitive psychology to address core factors impacting differential learning outcomes as outlined by Mountford Zimdars et al. (2015) to facilitate students' self-regulation of assessment feedback which is absolutely vital in empowering students.

Research design features included:

- interdisciplinarity – working with 11 disciplines in six Faculties drawing on co-owned principles of effective assessment feedback practice based on robust (EAT) frameworks/tools.
- discipline-specific interventions using a mixed methodological approach to trial pedagogical interventions in a nuanced way to meet requirements of the disciplines; Range of methodologies: action research; quasi experimental; pre-post-test designs;

- pre- and post-test fine-grained qualitative and quantitative measures to measure impact;
- evaluation of what works best and in what conditions along with evaluation of the success of the inter-disciplinary project in building shared understandings of good practice. Analysis focused on changes in students' engagement using the EAT Wheel; changes in assessment literacy using AL scale of Smith et al. (2013); Feedback Orientation using FOS (Linderbaum & Levy, 2010); students' learning outcomes; products; student satisfaction; comparison of module grades in previous years with performance of current cohort checking for equivalence in student ability across years; direct student feedback; student use of and engagement with activities; integration of ideas into curriculum delivery; impact on staff professional development; impact on programme, faculty, university improvement.
- *Note: The actual design of the research changed to align with key questions being asked by each project lead, to fit time-scales, and project leads access to modules. Designs were action research framework based suited to requirements of specific contexts (e.g., some using quasi-experimental designs with control and experimental groups, others using pre-post-test but all trialling the use of a common set of tools).*

Aims

Table 1: Addressing aims

Key aims	Outcomes
to work with students to enhance contextual and individual factors supporting students' access to, and use of, assessment feedback	The project identified the significant challenges involved in identifying and addressing individual and contextual variables impacting learning, and the importance of an evidence-based approach to understanding the needs of a diverse student body both within and across disciplines. Review of factors impacting students' engagement with

	learning has impacted curriculum development and is informing our Researching Assessment Practices University Strategy.
to enhance assessment design and identify what small-scale changes can be most effective in supporting students' and lecturers' learning/teaching using the notion of marginal gains	Ways of enhancing assessment design were identified but more work is needed to determine those elements that are most effective, and for whom. Findings need to be substantiated through implementation across a range of contexts; work is being carried forward as part of sustainable practice.
to examine the effectiveness of the EAT framework in supporting students in the development of self-evaluation skills through the intervention process	The EAT Framework was seen as valuable in supporting staff understanding of assessment design and key principles underpinning practice. Changes in students' engagement with assessment was noted in a number of projects and the aim is to develop the Framework further for staff and students.
to describe the features of effective assessment feedback interventions, what works in practice within and across disciplines, and for whom	We were able to describe what worked and also importantly what did not work in specific contexts. Research is ongoing to build a fuller picture. To date, findings validate the premises of the EAT Framework but are tentative given the role of confounding variables. The effectiveness of specific initiatives need further testing across contexts.
to provide tangible outputs (e.g. exemplars and models of effective practice) for colleagues across disciplines (exploring benefits for staff and students	Case studies/presentations/ process models are being used to inform practice. The development of staff expertise and embedding of innovations into the curriculum has been key. Case studies available on website - http://hefcea.eatframework.org.uk/ Research data base collated. Dissemination through internal and external conference events.

In evaluating the impact of the 12 projects involved in the *Supporting student agency and success in higher education and beyond through the development of assessment feedback skills (the ability to self-monitor and self-evaluate project,* it is important to consider the

case studies as individual projects in their own right, but also in their potential for collective impact on learning beyond individual and module levels. In this project, underpinned by the EAT conceptual assessment framework, impacts are evident in terms of student learning outcomes, satisfaction, perceptions, and engagement; the findings, in certain contexts are complex. Gains are evident in relation to staff engagement in learning, the building of a research community of practice focused on assessment and feedback, and through directly impacting professional practice, and curriculum design. A key aim was to build sustainability and this is clearly evident in lessons (positive and negative) being used to inform curriculum development over the longer term.

A summary of specific key learning points is provided below:

Planning

- Planning – the time taken to set up innovations is considerable involving negotiation with colleagues, and careful planning to integrate the idea into the 'fabric of things'.
- Time to explain projects needs to be factored into curriculum delivery.
- We need to carefully consider how to reach the 'unreachable' within our project designs.
- It is important to adopt an iterative approach to implementing innovations to enable flexibility in design to respond to local contextual and individual difference issues.
- Interventions that work in one context with one group of students may not work in another; we need to be vigilant and willing to adapt.
- How do we ensure students feel safe enough to engage while at the same time not mollycoddling them?
- Gaining support from line managers, associate deans and senior management teams in the University is important if one is to develop leverage.
- It is important that the work of teams is acknowledged.

Buy-in / ownership

- Students and colleagues need to see the relevance of the innovation to them. Time is needed to get buy-in; there are no short-cuts to achieving this.
- It is essential to explore the *readiness* of students to engage with the curriculum, and address key '*housekeeping issues'* (Scott et al. 2014) to foreground innovations. It

needs to be acknowledged that some students require a longer i*ncubation* period than others.

- Those delivering the innovation need to own it. They need to understand the principles underpinning it.
- It is important to know the key concerns of students /colleagues from the outset, and to consider how the innovation/intervention is aligned to addressing issues identified.
- The power of engaging students in delivering and evaluating interventions on learning cannot be underestimated.
- Working with students and colleagues to develop original ideas underpinned by research is important in supporting the longevity of innovations. It is important not to impose approaches.
- Building colleagues' confidence in developing and implementing innovations is critical.

Research-informed

- Colleagues need a shared understanding of the principles underpinning the approach if they are to be able to interpret them and apply them in a relevant way within their own context.
- To build shared understandings, time is needed to develop, and operate as a team.
- Professional development is needed in pedagogical research design and analysis, and evaluation.
- Training students in key skills such as peer feedback; assessment design is essential.
- Sometimes, innovations have the reverse impact to what we expected. It is important to not see this as a failure but as a significant learning point. Often things that do not work are under-reported. It is important to examine why things do not work and for whom if we are to advance our understanding of process.
- Projects need to be designed to support students' and academics' learning. In attending to understanding assessment criteria, the learning benefits are for staff and students especially in developing shared understandings of how a specific mark is achieved.
- Statistical significance is not enough, we need to consider the size of impacts, and also whether our findings are replicable.

Design

- Innovations/interventions need to be integral to the curriculum and not seen as an –add-on'.
- Tools/data used to promote student understanding may increase their awareness of what they cannot do and, or are less good at. Support needs to be factored in to assure students that' knowing what you don't know' is a good thing.

- 'Good innovations' impact on student learning can be nullified if there are fundamental problems with the curriculum design.
- Individual differences do matter. There are always some students who will benefit more than others; it is important to analyse who is advantaged/ disadvantaged and why.
- Good designs consider how ideas can be scaled up to support wider groups as part of spread / trickle down effects. It is important to avoid the idea of 'backwash' where the knowledge is contained by a small group.
- It is possible for relatively small-scale interventions to have a big impact.
- A key aim has to be sustainability:
    - To enable students to take more responsibility for their learning- which also, critically, may mean changing students' perceptions of learning and their role in it;
    - To be able to translate learning into curriculum development for the longer term; and
    - Using resource most efficiently.

Dissemination

- It is important to hold regular events to share learning as a team, and more widely, to gain 'outsider' insights.
- It is essential that information is clear and accessible to those beyond the discipline.
- The nature of an intervention, what informed it, how it was delivered, over what time period, and what outcomes, and lessons learnt to facilitate others in taking the ideas forward, all need to be explicitly outlined.

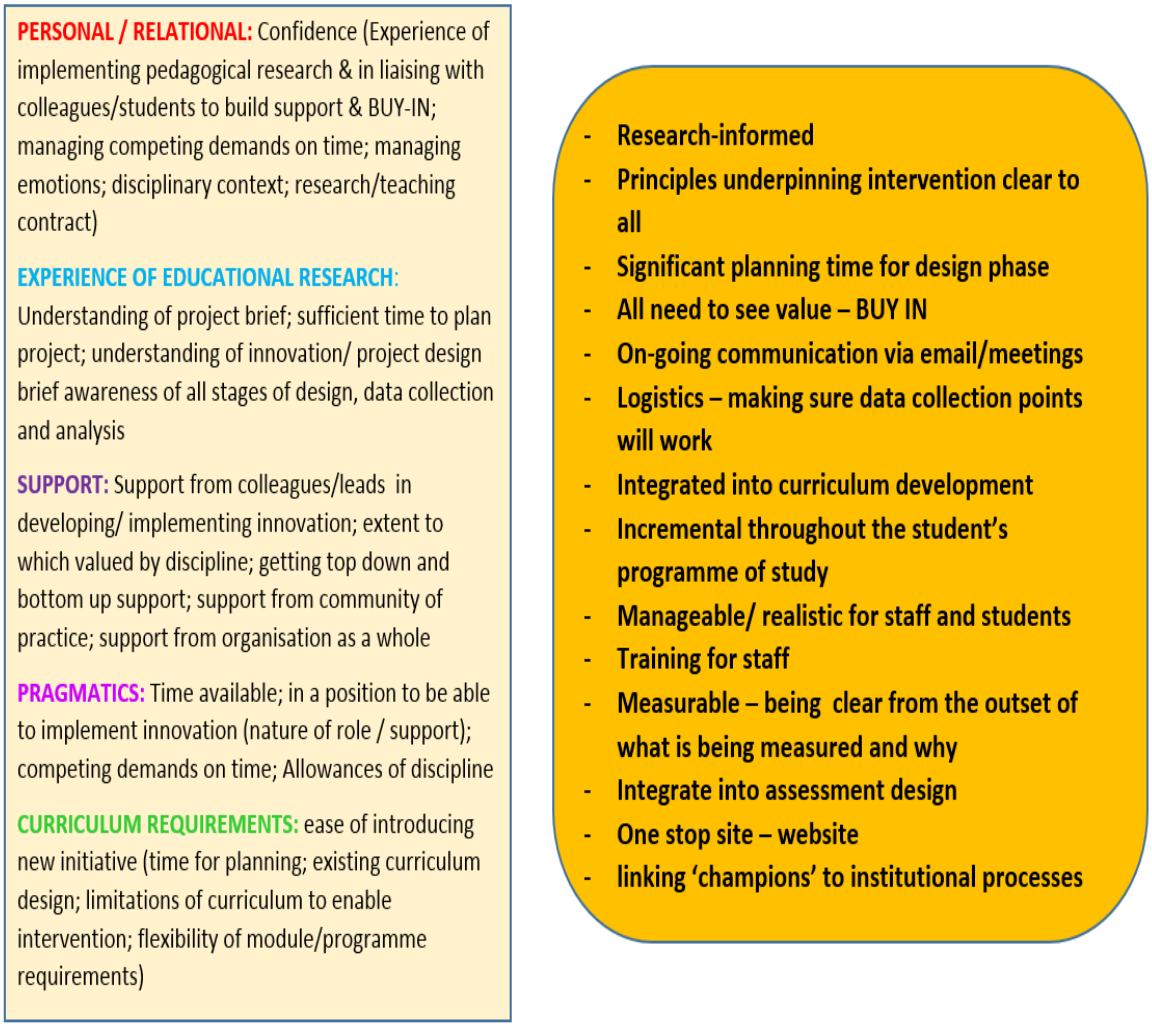

Figure 2: Factors impacting design and delivery of pedagogical interventions

Overview of Projects: The twelve case studies feature a range of interventions, all aimed at supporting student's self- assessment feedback skills underpinned by EAT Framework Principles. Full details of case studies can be found at: http://hefcea.eatframework.org.uk/

A. **Peer learning to support undergraduate research (**Business) (Ford, 2018).

Focus: Involved using student-led peer learning sessions to provide students with peer feedback on their ideas towards developing an assessed dissertation proposal, and knowledge of the theory of research methods assessed through a multiple choice test. The intervention involved training final year students to facilitate peer learning sessions. The second phase of the intervention involved training post-graduate researchers to deliver drop-in sessions for data analysis.

Outcomes: Led to increases in students' feedback orientation scores (FOS, Linderbaum & Levy, 2010); 15 out of 24 students increased their feedback orientation scores in the post-test, learning outcomes, and student self-efficacy were positively impacted. High attenders average module marks were 68% compared to 62% for low attenders. Caution is needed in the interpretation of results as these could be due to motivation of achievement bias; this needs further investigation. Average module mark increased from 59-72% from the previous year, although student satisfaction declined; multiple changes to the module from the previous year may be implicated. Feedback from students about the value of the intervention was mixed. Outcomes for the last phase of the project is awaiting interviews with students.

Key message: To be more selective and critical about where peer learning may or may not work.

B. **Does student engagement in self-evaluation impact task performance** (Business). (Chipulu, 2018)

Focus: Involved an assignment clinic and feedback workshop followed up with a focus group to discuss examples of areas of improvement students could propose. Students were asked to request feedback on a specific area of improvement based on their own evaluation of how a task went.

Outcomes: The students who engaged in the intervention- self-evaluation task did better than those that did not but other variables (e.g. student motivation) could be factors in impacting results. The average scores for the group who engaged in the intervention by asking for specific feedback was 80% compared to overall average for the module of 63%. (approx. 50% of the cohort asked for focused feedback). The project identifies the value of students' taking responsibility for asking for specific feedback- i.e. importance of student ownership of feedback. Student satisfaction increased significantly especially in relation to feedback, clarity of assessment marking criteria, usefulness and timeliness of feedback.

Key message: The criticality of planning. Planning well ahead of time, with intervention activities scheduled as part of the module timetable.

C. **Supporting and developing students' self-evaluation skills** (Social Sciences / Economics) (Lotti, 2018)

Focus: Formative feedback through focused workshop and peer marking activities to enhance assessment literacy.

Outcomes: led to overall statistically significant increases in students' perceived assessment literacy for the experimental group using EAT but no increase in the assessment literacy survey (Smith et al., 2013); no change in feedback orientation of students using FOS (Linderbaum & Levy, 2010); increases found in students' performance in one module but not in the second module where the intervention was also trialled when comparing experimental and control groups. Given that the students received the interventions at different times; it would be useful to see if the timing of the intervention was a factor in impacting student performance. The experimental group's responses were statistically significantly different to the control group's, both in their engagement with assessment literacy as measured by EAT, and in their overall engagement in assessment using all dimensions of the EAT Framework following the intervention.

Key message: The quantitative data shows how even a very small intervention with limited use of additional resources can be powerful and improve the assessment literacy of a whole cohort of students.

D. **Improvement of assessment feedback skills through assessment workshops, test design and use of electronic voting systems** (Electronics). (Mashanovich, 2018)

Focus: Clear explanation of what constitutes good and student entitlement explained through classes and VLE. Students were engaged in designing summative test questions and had to explain their rationale underpinning their choices; students were engaged in a 2 hour workshop working on previous exam questions where they worked in groups to produce solutions; students also marked exam answers; groups

also had to give feedback; a student response system was introduced in sessions. A second iteration of the project explored the impact of an increased number of formative assessments and less summative assessments on student development of assessment and feedback skills; and in using year two students in delivery of year 1 modules; and how second year students can pass their experience on to first year students.

Outcomes: Led to curriculum change in reducing the number of summative tests, increasing the number of workshops to support learning, with increased student satisfaction. Students' engagement and understanding of feedback was higher than their self-reported assessment literacy scores. Assessment literacy increased although changes were not statistically significant (Smith et al., 2013). Students engagement with assessment as measured by EAT did increase and the increase was statistically significant. Following the intervention, assessment feedback increased the most of the three dimensions (others to include assessment literacy and design). Significant increases in student satisfaction were identified, especially in relation to clarity of assessment criteria, usefulness, and timeliness of feedback. The students reacted very well to the introduced changes in the module delivery and particularly to the assessment workshop, test design and the new student response system (e.g., Top Hat). Key learning points were applied to further development of pedagogy.

Key messages: Student entitlement, and 'what constitutes good' should be explained not just at the beginning of the semester but also during the semester. This approach can significantly change dynamics in the class and significantly

improve the student learning experience. It can also hopefully improve their assessment feedback skills. Careful planning of teaching and learning activities and discussion with colleagues about different approaches is fundamental.

E. **Improving assessment literacy skills amongst first-year Humanities' students.** (Film/Humanities). (Spencer, 2018)

Focus: Three workshops were provided to develop students' assessment literacy (focused on essay writing, understanding of criteria, and understanding and use of feedback).

Outcomes: Positive impact on the development of students' assessment literacy, their performance, and satisfaction. The average module mark increased significantly, with awards of first-class and upper second class honours increasing from 46% of cohort to 66% in 2017 from 2016. With regards to assessment literacy (Smith et al., 2013), specific improvements in understanding of requirements, and students' ability to make informed judgements about the quality of their work improved and such changes were statistically significant. Student engagement with assessment as measured by the EAT framework increased in all three dimensions and especially in engagement with assessment feedback; all changes were statistically significant. However feedback orientation as measured by FOS (Linderbaum & Levy, 2010) did not significantly change. The interventions have seen improvements in students' understanding of assessment and feedback and begun to impact their development of self-evaluation skills. Assessment literacy (Smith et al., 2013) improved in the experimental group receiving the intervention but not in the

control group who did not receive the additional training. The experimental group scored themselves lower than the control group on feedback orientation and engagement with feedback; this could have been because the training made them more aware of their own limitations. The average entry tariff point for the experimental group was significantly higher than that of the control and needs to be considered as a moderating variable.

Key message: 'My focus has always been how to improve the module to enable the students to engage with, and better exploit, its content. I have learned that I need to give more attention to the students' emotions and how anxiety can affect their understanding of the material and their development to self-evaluate as independent learners.'

F. **Raising the students' awareness and comprehension of the assessment criteria and grade descriptors** (Law). (Thorpe & Telford, 2018)

Focus: Intervention involved students' engagement in tutorials to review a focused task (200-300 word summary), and for students to review work of another student; and the use of an online assessment literacy booster exemplar exercise; students were asked to grade previous students' work using the assessment criteria.

Outcomes: Some students found peer reviewing supported their understanding of assessment criteria and marking descriptors, and that they had a greater appreciation of how to analyse and judge their own work. The numbers engaging in the intervention was relatively small, with mixed impacts with some students valuing the activities and others not; with relative declines in student satisfaction especially

in one module. 89% of the students who engaged in the project looked at the intervention online activity but only 19% of this sample undertook the activity, and those that did, did worse than those students who did not actively engage with it. A key question is whether the students who undertook the task were weaker than those who did no engage, and/or whether the task confused or distracted students as to what was required in summative assessment. Finer analysis is required to distinguish between the students who did not engage at all, those who looked at the resource, and those that did the activity, along with what percentage of the students attended lectures, and when the students engaged with the activity. This study highlights the complexity and difficulty around assigning cause and effect.

Key message: Even a small scale intervention requires substantial preparatory work. This has to be carried out to the extent that students have a basic level of belief in the value activities. They also need to have gained sufficient knowledge, not simply to participate in the activity but so that they feel themselves adequately/appropriately knowledgeable to give the activity, in their eyes, value. Integrating activities into the curriculum offer is important. The tutorials in the activity drew on information covered in lectures, and given that lecture attendance was relatively poor this also had a knock-on effect on the intervention.

G. **Engaging with Feedback** (Mathematics). (Perisic, 2018)

Focus: Implementation of a small scale intervention in the design of formative feedback on weekly problem sheets to improve students' self-assessment skills, informed by the EAT framework (Evans, 2016).

Outcomes: No direct impact on learning outcomes and satisfaction but some changes noted in engagement. There was a statistically significant change in students 'minimal effort orientation' (i.e. students perceived they were putting in more effort), and in their ability to judge the quality of their own learning using Smith et al.'s (2013) Assessment Literacy Survey; students' also acknowledged greater responsibility in applying feedback as measured by the Feedback Orientation Scale (FOS) (Linderbaum & Levy, 2010). Students did perceive the intervention to be useful as identified in student feedback. Students' assessment literacy increased following the intervention; the results were statistically significant. Student comments indicated that they valued the attention on feedback and how the intervention was encouraging them to review feedback and do something with it. Students were positive about the value of the intervention, and were able to articulate self-regulatory mechanisms that they would employ (Perisic, 1, p. 5). Students recommended the approach be extended to other modules.

Key message: It is important to have the full support of everyone involved in the intervention (students and teaching assistants) in order to be able to allocate more time and resources into every single step of the intervention. Reiterate verbally the scope of the intervention and its potential benefits in order to better motivate not only the students but also the teaching assistants involved.

H. **Assessment literacy: Scoping the terrain. (Nursing)** (Gobbi, et al., 2018)

Focus: Aim to develop and improve first year undergraduate nursing students' assessment literacy and feedback with respect to their first written nursing

assessment and the generic criteria expected of them. Stage 1 involved a scoping exercise to ascertain students' views of assessment and feedback; Stage 2 comprised an adjusted series of academic study skills, with pre and post intervention tests augmented by informal feedback.

Outcomes: Structured support improved student performance with respect to their academic skills development. However, this support needs to address the variable skill levels and self-efficacy found in the student cohort. The intervention saw increases in student learning outcomes, student satisfaction, and enhanced focused feedback from staff following on-going professional development activities. There was no statistically significant change in students' assessment literacy (Smith et al., 2013) following the intervention, however on one of the sub-scales, students' perceptions of their ability to judge the quality of their own work declined; with greater impacts on males (less confident than females in judging the quality of their work post intervention). Using assessment to support understanding did increase, but was not statistically significant. There was no change in students' perceived self-assessment capability, however students' who perceived themselves to be better at judging the quality of their own work in the pre-test also perceived themselves with higher capacity in the post-test. Improvements in students' work in the areas that were targeted as part of this intervention were noted.

Key message: Students' self-efficacy influences their participation and perception of competence. Some students seem to be overrating their skill base prior to the formative assessment. We need to understand more about student experience of

academic skills development in secondary and further education contexts. Key lessons: Not to underestimate the diversity of the student intake and the level of structured guidance required at the beginning of the programme. Check student workload with parallel modules and control the timetable to space the academic skills sessions to best effect.

I. **Art or science? What constitutes 'good' in the production of a geological field sketch (Stage 1)? What constitutes 'accurate' in the collection of geological field data? (Stage 2).** Ocean and Earth Sciences (Harding & Grange, 2018)

Focus: On developing assessment literacy within the discipline through focused support with geological field sketches, and focused training session on collection and measurement of geological data.

Outcomes: The intervention saw increased engagement by students as measured by the EAT assessment wheel and particularly in relation to students' use of formative assessment opportunities and in their input into supporting the development of the programme. Other gains included students' confidence, students' performance, confidence of the academic team leading the delivery of pedagogy; sustainability through embedding the intervention features within curriculum design. There were statistically significant increases in students' engagement in assessment feedback especially in relation to making the most of formative feedback opportunities, where the largest amount of change was witnessed; and increases in all dimensions of engaging with assessment using EAT, excepting three areas (mapping how all assessments map together; understanding of the requirements of the discipline, and,

self-evaluation). Overall, students' engagement in assessment increased in all three dimensions of EAT (literacy, feedback and design).

In field sketching, on ten of the eleven components of assessment, students in the experimental group did better than the control group. The overall performance of students' sketch marks was better for the experimental group, and these results were statistically significant. Through engaging in the data analysis intervention students' confidence levels improved across all responses in the post-activity questionnaire with most students stating they were 'confident to very confident' about measuring and recording different types of geological data in the field. Students were also better able to identify planar and linear features after they had received peer-led training. Many expressed that their confidence in taking and recording measurements of geological field data had improved as a direct consequence of the training. Students also collectively recognised the benefit of receiving peer-peer group teaching, stating the experience to be 'positive' and beneficial owed to their peers sharing their 'perspectives', 'insights' and familiarity with 'common mistakes'.

Key message: Engaging students in discussion and involving them in the development of marking criteria develops their confidence and elevates their levels of assessment literacy. Providing opportunity for formative training fosters learning and increases the level of assessment literacy amongst students. Positive student outcomes from these types of activities are particularly notable when coupled with student-led approaches (e.g. peer-peer instruction). Have a good understanding of

the pedagogy behind the interventions you are implementing and ensure you can communicate the relevance and importance to the students in a language they will understand. Incorporating a range of activities (e.g. flipped learning materials, buzz groups etc.) maximises student engagement – keep a diverse approach to implementing teaching enhancements.

J. **Engaging students with assessment through student-generated multiple choice revision questions (stage 1); Use of feedback to support writing of practical reports for 2nd year Biological Sciences students (stage 2).** (Biological Sciences) (Lock, 2018) Stage 1 involved students developing 'challenging' multiple choice questions, and stage 2 involved a range of feedback strategies to support students' practical report writing to include Quickmark comments on reports, highlighting of marking criteria using a rubric, practical report skills report audit, and focused feedback using feedback to support incremental development of understanding of report writing. **Outcomes:** Students who engaged with feedback achieved higher marks; students' feedback orientations in some but not all dimensions improved using FOS (Linderbaum & Levy, 2010). Writing their own questions allowed students to increase their literacy with this type of assessment. There were statistically significant changes in students' perceptions of their assessment literacy (Smith et al. 2013) (understanding of criteria, standards, and protocols), and perceptions of their ability to accurately judge the quality of their work, and that of their peers increased. There was also a statistically significant change in students' orientation to learning; with students demonstrating decreases in minimum effort orientation, however

there were not statistically significant changes in students' perceived use of assessment to support their own learning. While there were no significant changes in overall feedback orientation as measured by the FOS scale, students' self-efficacy in relation to feedback increased from pre- to post-test and this was statistically significant. While students felt on the one hand more personal accountability within the feedback process, perceptions regarding the student's responsibility to apply/use feedback actually decreased and requires further examination. Did the support offered by the intervention actually, on one level increase dependence on the tutor?

Key messages: Fitting data collection within the normal running of the module is key. It needs to be a normal part of the module. That pushing the requirement for students to include the skills audit in their report did result in more students completing it. If we are going to include interventions, we need to highlight the importance to students of their engagement with it. Students *'are not as savvy as I had assumed. They are reticent and like guidance. However, they do not always perceive guidance as being useful, as they may not have the confidence to apply it'* (Lock, 2018, 3, p. 2)

K. **Learning how to use feedback effectively**. (Psychology) (Pettit, 2018)

Focus: Students were involved in interactive workshops focused on making good use of feedback. Students had opportunities to examine previous students' work, and the marks awarded and to develop action plans based on what they took from analysing excerpts from essays and the written feedback.

Outcomes: Students engaged in the interactive workshop. Clarity about the requirements of assessment were welcomed by students. Dealing with negative feedback and its impact on self-efficacy and motivation was a critical limiting personal factor. Students varied with regards to key curriculum factors they found most limiting. Students varied in their ability to interpret marker feedback. Real-time polling engaged students in giving feedback. Main outcome was in informing curriculum development regarding assessment and feedback priorities

Key messages: Much student feedback is in the form of written narrative by markers. Markers may spend a lot of time and care writing these. Despite this, students vary in their ability to interpret this feedback. It strengthened the view that staff and students need to work together to facilitate engagement in feedback in order to maximise learning as part of a two-way process. It is a two-way process. We need to build interventions into mainstream module/teaching rather than provide as an add-on. Tools need to be explained carefully to students to enable them to have maximum access to them.

L. **Students' opinions on the value of self-assessment from experience of Living and Working on the Web module.** (Curriculum Innovation, Business) (Fair & Harris, 2018)

Focus: Emphasis on promoting students' self-assessment skills. Students submitted blog posts, commented on other's posts and were engaged in a reflection blog post. Students self-assessed their performance in a specific topic using all the criteria from their own personal Google doc self-assessment and feedback form. Tutors reviewed

the self-assessments and provided specific feedback where tutor and student opinions on the assessed work differed.

Outcomes: It led to the quality of feedback improving. There was greater consistency in grading and feedback among the tutor team. 92% of students found the self-assessment useful. Average module grade increased but a number of variables could be implicated. There were noticeable increases in the percentage of students who strongly or partially agreed that self-assessment helped them to get the grade they needed to advance their learning more quickly; to track their progress; to learn what is important; to comment on peers' work more effectively; and to understand feedback better. However, it was also seen by students as a way to accurately understand what the bare minimum requirements are for a pass. While the percentage of students who found the marking criteria easy to use to self-assess increased, approximately 50% of students still found the criteria difficult to use.

Key messages: Self-assessment needs to be supported with assessment literacy development. It is important to provide explicit support for developing assessment literacies before asking students to start using self-assessment marking criteria.

Key themes

The 12 projects identify a vast range of factors impacting their development and achievement of their goals. A synthesis of some of the dominant themes are explored in more detail below. The themes covered are by no means exhaustive and no hierarchical emphasis is implied by the ordering of these themes. Many of

the themes highlighted are interrelated as identified in the EAT Framework (Evans, 2016). The nine themes highlighted in this report are:

(i) The importance of an underpinning research-informed pedagogical framework
(ii) Addressing contextual issues
(iii) Supporting team development
(iv) Research design
(v) Students beliefs and values
(vi) Integration of interventions within curriculum offer
(vii) Preparation for learning
(viii) Complexity
(ix) Sustainability

(i) The importance of an underpinning research-informed pedagogical framework

> The EAT framework provides a sustainable, inclusive and research informed approach, so it is a powerful way to develop our A&F framework. The focus on sustainability, on entitlement and on assessment literacy have informed my practices in various modules. (Lotti, 2018, 2, p. 4)

The EAT Framework was important in framing colleagues' foci and in helping to develop a shared understanding of principles underpinning assessment practices. From the outset it was important to ensure that we drew on a solid research base. It does, however take time to develop such shared understandings. Colleagues who were able to attend the regular support sessions benefitted more than those who were not able to, and especially in terms of being in a position to apply the principles to their own practice, and to explain them to others.

The principles underpinning the Framework became more visible though this research project. As a project lead, it became apparent early on that more work was needed to develop the principles so colleagues could apply them; work is on-going. Regular coming together of the team is essential in order to discuss understandings of research and how to apply principles to practice, and to address a whole series of questions around: (whether, in the first instance, we all agree with the principles, and even when we do, how do we get around barriers that we face in our daily practice in order to enact them). To answer these issues requires creativity and confidence in what you are doing; this takes time to develop.

A key issue was in developing a shared language in order for individuals to own the principles, and to be able to interpret them within different and very specific-discipline contexts. The extent to which teams understood and were able to implement the principles varied. At the start of the project such principles were very much implicit rather than explicit. A key development point in the project was the realisation that these needed to be addressed in a much more concrete and accessible way. It is very easy to misinterpret individuals' pedagogical research knowledge.

The importance of acknowledging the role of different disciplines and colleagues' different research and teaching backgrounds is critical in developing the much needed pedagogical understanding. Developing students' understanding of pedagogical principles and module requirements are also fundamental.

The EAT Framework was useful in enabling colleagues' to explore the integrated nature of assessment and to critique the strengths and weaknesses of the existing curriculum, and

importantly to propose where developments needed to be centred. It also enabled academics to explore their own beliefs and values impacting practice.

The innovations represent the start of a journey as acknowledged by many of the case study leads. For example, Thorpe and Telford (2018), Harding and Grange (2018) and Lock (2018) all identify the importance of using what has been learnt to look at curriculum development needs more holistically. In Law use of the EAT Framework enabled identification of areas within the curriculum that need to be addressed to help support students' engagement with assessment.

> On reflection, I realise there are several failings and challenges in our curriculum design. We tend to assume knowledge and understanding, as opposed to taking a more formative approach. This attitude risks setting students up to fail in assessment, which impacts their motivation to learn and their willingness to engage. I also realise that the curriculum is very staff as opposed to student-led. Therefore, students lack ownership of their programme. In addition, I have learned that the curriculum is often straight jacketed by timetabling and administrative constraints. These constraints prevent easy implementation of teaching and learning innovations, even where there is enthusiasm for change and programme/ module improvement. (Harding & Grange, 2018, 3, p. 2)

The Framework was also useful to enable students to evaluate their own roles in the assessment process and for students and academics to consider how all aspects of assessment design impact student's and lecturers' engagement with it. In Mathematics, Perisic (2018) identified the value of the EAT framework in visualizing for the students, the

journey travelled in trying to move students forward from a performance to a mastery orientation. Spencer found the students were prepared to engage with the EAT Framework in Humanities although in some disciplines such as Ocean and Earth Sciences, the case study leads Harding and Grange (2018) found this to be more problematic with such work being very unfamiliar to students.

> The EAT framework has been valuable in supporting this work for the students in terms of pedagogy and resources. The students also found the EAT Student Scoring diagram interesting and, as a result, engaged actively with it. From the viewpoint of the tutor, I found the framework useful to support my activities in giving me a different perspective on how students view assessment literacy, feedback, design, and self-regulation through the use of the Student Scoring and Lecturer Scoring diagrams. The project has created much more of a sense that students are partners in the assessment and feedback process. Student engagement has improved and these students are now more aware of their own role and responsibilities. (Spencer, 2018, 1, p.11)

EAT stresses the importance of iterative and on-going development for academics and students; the more we explore our practice the more we uncover new understandings to refine what we are doing and to tweak according to the needs of different cohorts / our own needs in different contexts. The curriculum needs to be dynamic (Mashanovich, 2018) and not static. Spencer (2018) found the Framework useful in supporting academics' assessment literacy.

> The project has raised awareness of assessment literacy across the Faculty, with staff development events on EAT promoting the development of an ongoing professional conversation. The Framework has also been an invaluable

> resource to disseminate to colleagues who want to develop their own teaching practice… This work pays dividends in relation to the time and effort involved. The students develop skills which support their academic work, they are more satisfied with the module, and more of them achieve marks in the upper-second and first-class grade bands. It is also worth noting that the students seemed to enjoy doing the project and found it interesting. …The EAT framework has been particularly valuable as a practical handbook for colleagues in the Faculty as well and has generated an ongoing professional conversation which augurs well for the continuation of this work. (Spencer, 2018, 1, pp. 11-12)

In Nursing, use of EAT has supported colleagues to understand more about their own curriculum and to consider the *readiness of students to engage with the curriculum*, and crucially students' reticence to engage. Gobbi et al. (2018) argue the importance of using an evidence-based approach to eliciting students' perceptions and needs to inform actions:

> Our curriculum design therefore needs to focus on enabling transition within the first year from dependent learning habits to independent ones. This also includes a better preparedness for academic skill development within the discipline. (Gobbi et al., 2018, 3, p.2)

Feedback from students highlighted that many had not thought about their role in assessment in the way we were asking them to do so and there is evidence that the EAT wheel can change the lens through which students look at their role in assessment; the real test is whether changed insights lead to changes in practice.

> I think the EAT wheel exercise encouraged the students to think more broadly about their understanding of assessment, feedback and assessment design.

> On reflection, I believe the exercise also highlighted to students several areas/ concepts they were not familiar with/or had not thought about before in the context of assessment feedback. Where the EAT wheel exercise was most useful, was in identifying where students had low levels of comfort, confidence, and/or understanding and therefore helped them identify their assessment priorities. Most importantly, the exercise emphasised the role and responsibilities students have in their own learning, particularly in relation to feedback (i.e. they need to be active, not passive, in this process). (Harding & Grange, 2018, 3, pp. 2-3)

(ii) Addressing contextual issues

In implementing the focused innovations we were mindful of the 'nested nature' of pedagogy and the current challenges facing academics inherent within higher education. It is useful to consider how macro, meso, and micro level factors, as suggested in Figure 1, impact the development and implementation of innovations. At the national level, Southampton received a Bronze rating in the UK government's Teaching Excellence Framework (DfE, 2017); the pressures on some Faculties and some disciplines given their relatively poor student satisfaction scores ironically can limit innovation for many reasons (e.g., through trying to implement quick fixes that do not address core issues; encouraging too much/or to little change; defensiveness/worry on the part of academics of potential negative consequences of changes in increasingly higher stakes environments etc.). The national narrative in 2018 is very much about '*value for money*' and HEIs accounting for students' learning gains with little dialogue about the role of students in the learning process, and the importance of triangulating methods of

analysis of student learning outcomes. The REF (2020) and associated increasingly frequent REF audits is an additional and growing focus for many colleagues. Also at a national level, UK students, come into HE having been very strongly externally regulated within schools; the jump to independent learning is a massive leap for many; and again the emphasis within higher education is often to overload student entry points with too much information where an integrated and progressive development of essential information sets is needed.

At the institutional level, there is the way that the NSS plays out at the Faculty and discipline levels which is also impacted by University restructuring, impacting job roles, security of tenure; composition of teams; changes to structures, processes and systems.

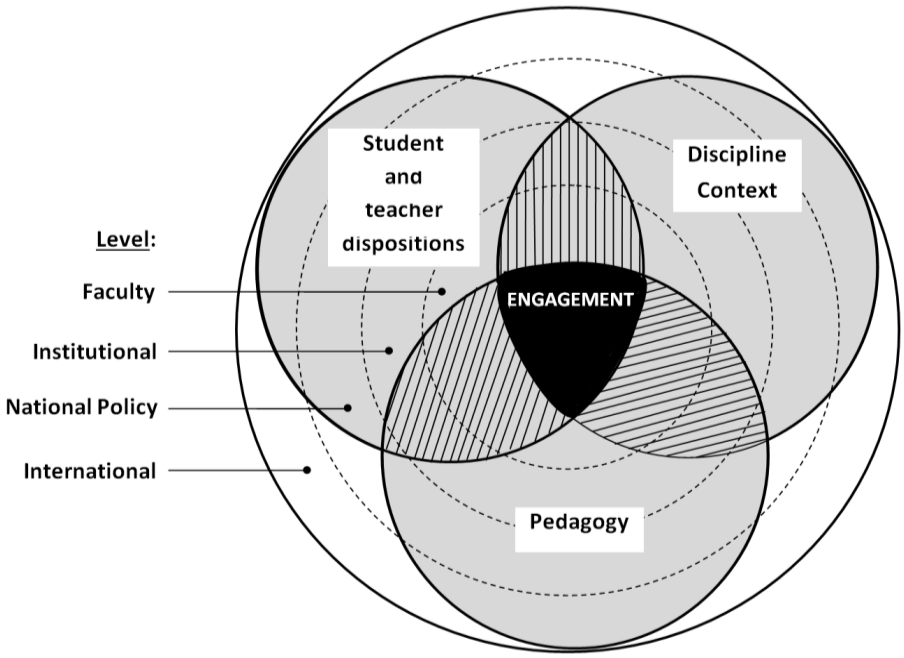

Figure 1: The nested nature of pedagogy (Evans, with Muijs and Tomlinson, 2015)

In trying to implement pedagogical interventions, we had to be mindful of macro, meso and micro changes going on within the University which impact daily working, and design of projects.

The organization of the curriculum at the programme and module level are key influences impacting what innovations are possible. Case study leads' agency and autonomy to make changes was also variable given their different roles, the impact of external professional and statutory regulatory bodies; faculty structures and targets etc. The legitimacy enabled by being involved in the funded project, with on-going support was critical.

The success of any innovation is contingent on underpinning critical factors such as the assignment being clear and well aligned with the programme and module content, and also the degree of change going on within a module (Ford, 2018). In this research project teams explored contextual and personal variables impacting students' engagement with learning. While it is possible to identify dominant themes, there is also considerable variation within and across student cohorts, and disciplines. Of critical importance, and raised in many of the case studies was the organization of assessment in modules and programmes, with bunching of assessment causing students concern (Harding & Grange, 2018).

It is important to review where the design of assessment may actually be interfering with, and even un-doing learning (e.g. assessment points too early on do not allow students to fully use the learning from the module and also sends the message that some contents are less important?). As noted by Ford *'the effectiveness of peer learning as an intervention is*

dependent on underpinning critical factors like the assignment being clear and well aligned with the programme and the module content.' (Ford, 2018, 1, p. 5). Ford in developing his second intervention acknowledged the need to treat it more holistically (taking account of the other changes on the module that could impact the effectiveness of the intervention.

The design of assessment and spacing of assessment tasks impacting students' feelings of being able to cope are highlighted in the case studies with students' concerns about perceived workload, and lack of clarity about assessment requirements. Interventions layered upon what is already seen to be a challenging curriculum (poorly constructed) may not be received well by students if they are seen as adding even more to workload.

> Good curriculum design, where all the elements fit together, there is clear progression, the assessments are worthwhile, and the students can engage in deep learning, making associations across and between modules, is a minimum to ensure the **students feel safe enough to engage** with the materials. The spacing of the assessment deadlines is more important to the students' sense of being able to cope than I would have expected. (Spencer, 2018, 3, p. 7).

The issue of parity and fairness impacts students' attitudes towards assessments. Thorpe and Telford (2018) highlighted that underlying module factors may impact students' engagement with, and impact of, interventions. Law students' believing their mark to be dependent on the personal attitudes of individual staff, rather than any School-level assessment criteria and grade descriptors was an important underlying confounding variable. Any actions to enhance understanding of criteria will not have the desired impact

if pervasive attitudes such as these are not addressed; this also involves the need for staff training.

The importance of a holistic and integrated approach to assessment design; promoted within the project and through the Researching Assessment Practices Strategy, and the limitations of not considering this, or not being able to do this due to contextual constraints is neatly summarised by Pettit.

> That there are pros/cons of highly modular u/g programmes. Each module has formative and summative assignments attached that might have been carefully considered in relation to the module learning outcomes. Students have opportunity to give and receive feedback relating to their progress with that module. However, there isn't necessarily an overall assessment strategy at programme level so there are missed opportunities to think of overall development/growth and how this links to assessment/feedback. This means there might be limited opportunity for feedback to be used to inform the next piece of work. It's unsurprising, therefore that students see their feedback on progress as unrelated to the next module/semester. (Pettit, 2018, 3, pp. 1-2)

(iii) Supporting team development

> On reflection, I think I was somewhat naïve about what teaching interventions, such as the ones implemented, involved (i.e. the level of organisation required and committed necessitated). I was also quite ignorant of the pedagogic context that was relevant. As a consequence, I underestimated the level to which I would feel uncomfortable talking to students about these concepts, especially when I was trying to convince them to engage in the process. I believe the latter is owed to my scientific

> training and focus, and the divergent approach used in the implementation of scientific research. However, participating in these interventions has shown me that I am flexible and inclusive. I can take on new (and daunting!) challenges and complete these challenges to the best of my ability. This experience has also confirmed my enjoyment of team teaching and working with like-minded colleagues. (Harding & Grange, (2018, 3, pp.1-2)

Lack of academics' confidence in applying the pedagogical framework principles into teaching need to be addressed early on. The time required for planning and preparing for the interventions was considerable and in retrospect some projects needed far longer to develop and test ideas and especially given the challenging contexts for some interventions.

There were practical issues in finding time within already crowded curricula and the difficulties of negotiating time with colleagues not directly invested in the projects; the importance of full team support for the projects cannot be underestimated. In some projects (Gobbi et al., 2018; Lotti, 2018) the project leads were not directly involved in the teaching; a key issue here is how we develop a shared understanding amongst all members of a delivery team and how time is set aside to enable that to happen.

Support is needed in the design and implementation of interventions with the co-ordination and timing of data collection being critical. Assumptions were made about participants' knowledge of pedagogical research and comfort in being involved in it. As noted by Perisic (2018) ***"A move from anecdotal evidences to research is not a trivial one'***, and:

> To link pedagogical work with teaching is more demanding than originally I have anticipated. It requires much more time for planning, implementing, reviewing and keeping under constant motion. It is not easy to measure effectiveness of our teaching methods that are usually informed mainly by our own experiences. My ability to negotiate and persuade use of slightly different concepts could be improved. (Perisic, 2018, 3, p. 1)

The amount of planning, negotiating with timetabling, colleagues and students eats into the time individual colleagues had for the planned interventions. It is important that the work of teams involved in such innovations is acknowledged by line managers and included in the personal annual review process. As part of our Researching Assessment Practices initiative we have been working with Advance HE to look into how academics' specialist work in assessment can be externally recognized. We have also explored ways to provide focused funding to support individual initiatives tapping into internal and external sources of support.

In supporting staff in engaging with pedagogical frameworks it is also important to understand that students in certain disciplines may find it difficult to access and understand the relevance of pedagogical frameworks; this issue is exacerbated where staff also lack confidence and experience in discussing the nature of learning with students. This issue is articulated well by Harding and Grange (2018):

> Engaging students in the development of marking criteria proved very effective at developing students' confidence and assessment literacy levels. Overall it was harder to engage the students in the pre- and post-tests centred on the pedagogy of the project (e.g. the EAT wheel and the F&B

> questionnaire). This lack of engagement is likely owed to geology and geophysics students lacking familiarity with and understanding of these types of tests. As members of staff delivering the intervention, we also found delivering these materials challenging for the same reasons, however a notable improvement in comfort level was observed by the project leads when the session was repeated (i.e. the intervention was ran twice and the student cohort split between two sessions).(Harding & Grange, 2018, 1, p. 5)

Who also advocate the importance of *'Hav[ing] a good understanding of the pedagogy behind the interventions you are implementing and ensure you can communicate the relevance and importance to the students in a language they will understand. Incorporating a range of activities (e.g. flipped learning materials, buzz groups etc.) maximises student engagement – keep a diverse approach to implementing teaching enhancements.'*

(iv) Research design

In this project we adopted a form of action research design (Scott et al., 2014) with projects using mixed methodologies and employing a range of designs. Common to all projects were specific design tools to include EAT assessment engagement wheel (Evans, 2016); Assessment Literacy Survey, (Smith et al., 2013); Feedback Orientation Scale FOS,

(Linderbaum & Levy, 2010); Developmental Space, Van der Zwet et al., 2011; and additional discipline bespoke measures.

Some projects employed a quasi-experimental approach and were able to have a control and experimental group; this was not feasible for all projects. Many used pre and post-tests. Students' completion of post-tests was an issue for some projects. What can be deduced from analyses of data, even with using robust, valid, and reliable tools, depends on the thoroughness of data collection in the first place. The rate of completion of pre- and post-test measures impacts the analyses that can be undertaken and the inferences that can be implied. Timing of interventions in relation to assessment tasks is also critical as results can be significantly skewed by such things as the timing of important summative assessments. A number of additional key factors were identified with research designs as highlighted below and also indicated in latter sections of this report:

- Timing of data collection points; failure to timetable in final post-test collection points into teaching time meant poor returns limiting the nature of what analyses could be applied and inferences that could be made.
- Engaging students' participation. Participation rates varied from 20-85%.
- Even where participation rates were high, in at least one project few returns could be used as mapping pre to post surveys was made difficult by students omitting important details in their returns.
- The need for research designs to be very focused in order to be more able to minimize confounding variables; often complicated by modules having undergone

significant changes to previous years making comparisons of year groups difficult even when the nature of participants has been controlled for.

- Difficulties in integrating innovations with current curriculum design.
- Difficulty of ensuring the integration of project principles when devolving the activity to colleagues; and gaining colleague buy-in to initiatives.
- Limited time to develop and implement innovations.
- Curriculum demands limiting time to explore and develop projects with students.
- Accessing difficult to reach students: to what extent was data collected representative of those difficult to reach students? (Ford, 2018).

The importance of qualitative data to explore the meanings behind the data are important. A key lesson learnt from the research design is to try and tailor tools closely to the requirements of the discipline and to try and negotiate more time to share with students the relevance of the approach to try and engage greater buy-in.

The use of good tools is not enough. It is about how one is using the tools aligned with the underpinning EAT principles to ensure an inclusive, integrated, and self-regulatory approach to learning. In designing interventions it is important to address underlying issues with module design and to ensure iterative evaluation of how the innovation is working throughout the module/ programme to enable fine-tuning of initiatives; failure to do this can have negative consequences as identified by Thorpe and Telford (2018). In developing interventions working collaboratively with project teams to ensure shared understandings of how to enact the principles underpinning the EAT framework is essential. Gobbi et al.

(2018) highlighted the importance of an iterative approach to fine-tuning assessment practices.

Also of note, were mixed results for similar constructs using different tools. It is very important to understand what tools are actually measuring and ensuring consistency in use of approaches. Equally important is the reporting of non-statistically significant results.

(v) Students beliefs and values

A key issue impacting the case studies and other Catalyst A projects as identified by HEFCE/OfS (Gordon, McKenna & McCabe, 2017) is student and wider staff engagement**.** Engagement is a key concern. However, the relationship between engagement and learning outcomes is complicated. Engagement does not always translate to positive learning outcomes, but as a bare minimum it is very clear that student attendance is a key factor (Schneider & Preckel, 2017).

In our project we considered how assessment can be designed to encourage learning, and fundamentally, student ownership in order to support learning. Tackling students' beliefs and values is central to the engagement issue, along with integrating innovations into taught delivery and aligning them clearly with the requirements of the discipline. Understanding those issues that are most problematic to students, and also addressing the variation there is within the student body is important. We found that while there were generic concerns common to most disciplines, there were also very distinct disciplinary

differences, and differences within discipline groups. Understanding the nature of your tribe and what bothers them is crucial to any innovation.

> The focus on intellectual processes is insufficient when faced with groups of students whose academic performance is influenced by emotional and/or socio-economic factors. (Spencer, 2018, 3, p. 1)

In exploring facilitators and barriers impacting assessment, Spencer (2018) noted the importance of module organisation, and students' perception of the quality of assessment feedback, with the timing of assessment and nature of overall assessment design being key. From a socio-emotional perspective, of primary importance to students was their lack of self-confidence and poor self-evaluation skills, followed by their ability to apply feedback and deal with negative feedback, highlighting the emotional as well as cognitive dimension of assessment. Of particular note here is the impact of students' self-confidence and anxiety on how they engage with their modules, with their view of the module driven by their levels of self-confidence. Spencer (2018) argues *'Interventions would be best placed in tackling issues relating to social interaction, anxiety, and confidence in the classroom.'*

What the results have shown is that their intellectual achievement may hampered by social and emotional factors (Spencer, 2018). Student beliefs impact how students see the value of specific practices. Ford (2018) found that his students had different expectations of their student peer leaders than those held by academics (Ford, 2018). Some students saw the main role of peer leaders was to teach rather than to facilitate the learning of students. He

concluded that peer learning, in order to be successful, required students to engage with the subject content and their role within sessions; this takes time to inculcate and needs to be made explicit by the subject lead.

A key recommendation from the case studies is the importance of planning in sessions for first year students to explore their role within HE and the skills and expertise required within and beyond the subject. The importance of students experiencing the marking process themselves should be integrated into the timetable (Lotti, 2018).

Students may be less secure regarding their own role in the assessment and feedback process as identified by Spencer; more detailed guidance is necessary: '*The scores from the three quantitative surveys inflected through the Developmental Space questionnaire has raised the importance both of feedback and of issues around anxiety, confidence and self-evaluation. It would also appear that gender and prior educational achievement and experience influence students' engagement with a module.'* (Spencer, 2018, 1, p.12)

Several case studies (e.g. Perisic, 2018) raised the issue of managing students who were 'performance' oriented (interested in grades) rather than 'mastery' oriented (interested in understanding). A key question is how we can enhance student engagement with learning through the design of assessment to impact motivations and approaches to learning.

> They [students] are highly logical, strategic and goal orientated. They assess the possible concrete value of any effort expended and want to see effort translated into marks. (Spencer, 2018, 3, p. 1)

Thorpe and Telford (2018) discuss the difficulty experienced in getting student buy-in in terms of engagement with their intervention; this highlights the importance of using EAT Framework principles to spend time with students to explain the relevance of the intervention which is challenging given constraints with an already crowded curriculum. To enable sufficient time to focus on process, does require adjustments in what is covered as part of the core curriculum, this requires negotiation with teams and is not something that can be quickly decided upon although the evidence would suggest that a slimmed down curriculum offer focusing on threshold and key concepts is beneficial to students' learning (Evans, 2016). To support student engagement, fine-tuning measurement tools to be accepted, and seen as relevant within a discipline, and ensuring sufficient time for staff and student training can all support student engagement. However, interventions need buy-in from all colleagues within a team if students are to also engage. A key issue with peer activities is that it is often under-estimated how much time is required to train students in such activities, and such activities need to be at a level, and focused enough so that students feel that they can contribute. The direct relevance of activities to final assessment need to be made clear in the design and explanation of the tasks to students.

> staff must be alert to the unintended consequences of an intervention which may be more extensive than the scale of the activity itself. Staff involved need to be ready to detect these and act to ameliorate them if necessary…in the future students need to have far greater preparation before being exposed to such interventions. This is necessary in the first instance to 'sell' the idea of the students engaging in their own educational development rather than somehow seeing this as simply delivered to them by staff. Beyond that they should, if possible, be enabled to feel that they have a

> sufficient level of skill to collaborate with their peers in such a way as to bring value to the activity and value which apparent to them and accepted by all. (Thorpe & Telford, 2018, 3, p. 7)

The facilitators and barriers exercise undertaken by Law highlights the importance of addressing students' perceptions as a starting point and as part of any intervention as demonstrated by Gobbi et al. (2018). Undertaking such an activity is not a licence to pander to a student 'wish list' per se; it should be an opportunity for a dialogue with students about their roles and responsibilities within the assessment process. The feedback can be illuminating and provides information on where interventions need to focus from the outset, and also where attention needs to be placed on addressing contextual issues prior to investment in specific innovations as noted by Ford (2018) in his acknowledgement of the importance of considering where peer learning is most appropriate (the timing and nature of the intervention is important). As identified by Thorpe and Telford (2018) students appeared to adopt a very transactional view of learning seeing their role as to receive information from a tutor. If students perceived the peer support offered as part of the intervention was in place of feedback from academic staff that may lead to negativity in how an approach is perceived. A key issue identified in the feedback from Law students was their perception of a lack of consistency in marking within and across academic teams; an issue identified as one of the most important in impacting students' perceptions of assessment at Southampton more generally (NSS evaluation 2017). In designing interventions, it is important to '*identify the elephant in the room*' and tackle this first. Thorpe and Telford's honest analysis is a really important contribution to our innovations

project in highlighting some of the negative impacts of trying to implement initiatives that actually may not reach to the heart of the problem, and also in highlighting fundamental curriculum issues that permeate the impact of any intervention.

In Mathematics, Perisic (2018) also found moving students from a performance to a mastery approach was difficult. She highlighted that students did not appear 'interested in the subject beyond the mark' which raises questions again about how design can impact students' thinking, however, given this difficult context, there were elements in her findings to suggest 'shifted student perceptions.'

Student attendance in sessions was a key issue across case studies; this is the case even when interventions have been conducted as an integral part of delivery. There is a real conflict between notions of student autonomy and agency to choose as to whether they attend face-to-face sessions, and large scale evidence highlighting the importance of attendance on learning outcomes (Schneider & Preckel, 2017). The issue discussed by Harding and Grange (2018, 2, p. 4) is highly relevant regarding how we work with students to see the value of attending and contributing as part of their role within the assessment and feedback process.

> The peer-peer group teaching was very well received. Several students commented this was a useful exercise and an effective way to learn. The project leads also noted that the level and degree to which students interacted with their peers was greater than typically experienced by themselves as staff when undertaking similar exercises. The peer instructors also commented on the benefits of engaging with teaching activities. Their

> experience reinforced the techniques and field skills they were providing training in benefitting their own development and learning. Module participants also commented on how much they valued the step-by-step guide provided to supplement the session. (Harding and Grange 2018, 2, p. 4)

In Biological Sciences (Lock, 2018) engaging students was also identified as a key issue and the importance of designing an intervention to which students can immediately see the benefit of participating in is highlighted. Again, the conclusion is very much that the intervention needs to be an integral part of the curriculum

(vi) Integration of interventions within curriculum offer

The case study projects reaffirmed the importance of integrating initiatives and associated evaluation into taught delivery rather than as stand-alone workshops, and one-off interventions; this was resonant in most of the projects.

> Resources aimed at developing an understanding of assessment & feedback practices in Higher Education should and need to be monitored. Projects aimed at evaluating the impact of resources (time & effort) introduced should become part of the day-to-day activities and staff workload. My advice is that the evaluation should be included in the curriculum of the module/programme under investigation and students should feel part of the research. (Lotti, 2018, 2. p. 8)

Sustainability of interventions was one of our key priorities in developing the case studies. A key limiting factor was the time frame for implementing ideas when they need to grow and develop with the students as part of their learning journeys; this point is articulated by Lock (2018):

> The use of a feedback portfolio is not a solution to students giving a low score for assessment and feedback in the NSS. We need a more consistent and thought through approach, from first to final year. It takes time for students to confidently engage with feedback, especially if it is perceived by them as negative after they have spent a long time on a piece of work. (Lock, 2018, 3 p. 2).

Similarly, Ford (2018, 3, p.3) reflecting on the critical factors for **successful peer learning** interventions argues that '*the assessment needs to be designed to encourage learning. If the assessment is seen purely as a means to test the student's attainment of the learning outcomes, this can lead to failure in motivation to engage with the module content' and specifically the importance of:*

- Being clear about the nature of the support and distinguish it from teaching;
- Ensuring that the curriculum and assessment design is robust. Peer learning can provide a valuable feedback channel to identify problems with assessment timing and alignment, however it is not a remedy for poorly designed or communicated assessment.
- Effective Peer Learning being dependent on engagement with teaching. As peer learning aims to facilitate deeper learning through discussion and sharing of

> knowledge (rather than teaching) it requires students to have a level of engagement with both the subject content and being active in the sessions (rather than expecting to be 'told the answers').

Mashanovich (2018, 1, 4) argues the value of working with students to enhance time management and assessment skills but, that at the same time, more needs to be done to consider the holistic nature of assessment and barriers that get in the way of students and academics being able to self-regulate.

> It seems that more can be done on a programme/departmental level to design modules and assessments such that overlap between different coursework deadlines are minimised. Better timetabling is also needed. Overassessment can also be a problem by affecting student time management and exposing them to higher levels of stress. Improvement of time management and assessment skills are very desirable such that overlap between different coursework deadlines are minimised. Better timetabling is also needed. Overassessment can also be a problem by affecting student time management and exposing them to higher levels of stress. (Mashanovich, 2018, 1, 4)

(vii). Preparation for learning

> 70% of the students reported that they couldn't identify areas where they would like particular preparation for their summative assessment. This raised the question as to whether they had received enough feedback, or whether they didn't know where to start? (Gobbi et al, 2018, 1, p. 4)

In considering the focus of interventions, how students view their role in assessment impacts their engagement with, and perceptions of it. In supporting students to be more self-regulatory there is the inherent balancing act of supporting students' learning but at the same time promoting independence rather than dependence. When student satisfaction is low, there is a tendency to do more. More and more feedback is not the answer; it is about supporting students to make best use of all feedback opportunities and looking at best use of time. In the example given by Gobbi et al. (2018) above, it raises Sadler's (2010) analysis, that often it is not feedback that students need, they need to go back and do the requisite learning. Early opportunities to test understanding should be integrated within assessment so students can take control of their own learning.

In considering student readiness for learning it is vital to address students' beliefs, values, and conceptions of learning. In positioning interventions, they need to be seen as relevant to students, and students need to be exposed to ways of using the ideas and seeing the utility of them beyond the immediate context. The importance of critically considering the relevance of a specific type of intervention, in a particular type of module, along with considering the 'hygiene factors'; what needs to be done to prepare the way for the intervention cannot be underestimated.

While fear of failing was a dominant concern of many student groups; overconfidence at the start of an intervention was also frequently recorded. As noted by Harding and Grange (2018) their pre-activity questionnaire revealed that most students were moderately confident – confident about taking bearings with their compass clinometers, and recognising and recording planar and linear geological features in the field. Despite this

preconceived confidence, most students identified several phenomena incorrectly as either planar or linear features. It is not surprising to see students' self- assessment of capabilities reduce over the course of an intervention as they move from an 'unconscious incompetence' state to greater understanding of what they do not know. While some groups of students may handle this well, others may not, and as previously highlighted, supporting students to manage their emotions and to manage 'not knowing' is essential.

Gobbi et al. (2018) highlight students' fear of failure as being a concern of the vast majority of Nursing students, with worries about assessment being dominant. Students' self-efficacy influenced their participation and perception of competence. Some students overrated their skill base prior to the formative assessment. The team acknowledged that they needed to understand more about students' experience of academic skills development in secondary and further education contexts in order to manage the transitions with the students better. Key learning points were:

> [students] seem to require more structured support than staff have anticipated, and indeed with respect to cohorts of say five years ago. This is not a reflection on their academic capability, rather their skills in self-regulation, time management and resilience. They have responded well to iterative engagement but perhaps have some unrealistic expectations. They require confidence boosting strategies and reinforcement perhaps more than previous generations. (Gobbi et al., 2018, 3, p.1)

The importance of training students in how to make the most of interventions is imperative and takes time, and also confidence on the part of the instructor.

> Another key reflection is to consider how the students' programme has prepared them for a Peer Learning Intervention. It was clear that some of the students attending sessions had not experienced types of learning that required them to be active in their learning and this resulted in expectations on the peer leaders to answer all of their questions. Whilst the benefits of peer learning for transition to higher education are well understood, introducing it for 2nd year students is challenging and would have been more effective if the students had experienced this type of learning in their first year. (Ford, 2018, 1, p. 6).

Enabling sufficient time to explain an intervention and how students can be involved in it is essential. How the project is set up and communicated and its relevance demonstrated is fundamental. Often insufficient time is available due to pressures on teaching time to do key preparation activities; the issue is exacerbated by relatively low levels of student attendance in some modules as already noted.

Thorpe and Telford (2018) highlight the importance of training students so that they feel more in a position to engage in assessment interventions:

> It is hoped that a greater 'scaffolding' of the educational development will enable students to comprehend the activities and see the value for their assessed work for the module, if not for their broader studies. It is hoped that providing a more solid basis for the activity will reduce both the critical attitude towards such work when completing the module evaluations, let alone the negative impacts on student attainment whether caused by them over-estimating their skills; misleading them as to what is required, or through reducing their confidence in their abilities in producing the assessed work. (Thorpe & Telford, 2018, 3, p. 9)

Clarifying what feedback is and how to utilise it was valued by Mathematics students although they raised underlying curriculum issues about the timing of multiple deadlines:

> Anecdotally the students appreciated the intervention that put emphasis on working with feedback, rather than just assuming that students know what is meant by 'feedback' and its important role for their learning. The students' comments include '*I like how the module encourages me to look at the feedback for my previous homework and write about it.*' (Perisic, 2018, 1, p.5)

In Nursing, Gobbi et al. (2018) highlight the importance of not underestimating the diversity of the student intake and the importance of the level of structured guidance required at the beginning of the programme. Again the issue of programme organisation and impact on workload was identified along with considering how to space academic skills sessions to best effect. This concurs with emphasis in the literature on the importance of early interventions to support students' understandings of what is required, and the ability to accurately estimate their performance (Sadler, 2010).

In Ocean and Earth Sciences, Harding and Grange (2018) found that having participated in skills training and been asked for their reflections, student responses under AD4 (students engagement in supporting enhancements in the curriculum) suggest they now have a better appreciation of how they can contribute to the ongoing improvement of their programme. Given their responses under AL4, (understanding requirements of the discipline); AF4 (self-evaluation), and AD1 (understanding HE regulations and processes), students' assessment priorities should now focus on developing a better understanding of the requirements of their discipline and assessment in HE, and methods of self-evaluation.

It is not surprising that many of the case studies while initially wishing to focus centrally on assessment feedback, felt the need to start with assessment literacy. As identified in EAT (Evans, 2016), if you do not know what quality is, how can you make sense of feedback?

> It became apparent that students need, (and ask) to **become familiar with the terminology used by academics when marking and providing feedback**. In our subject, as in other disciplines, there is a growing belief that in order to improve, students should deeply understand the marking criteria. A successful way to do so is by organizing practical workshops. Students are learning how to write a good essay or a short question or a problem set by marking real or prepared examples. (Lotti, 2018, 2. p. 4)

Peer working can have mixed impacts on students both within and across case studies. With negative impacts in Law and mixed ones in Business (Ford) and positive ones In Ocean and Earth Science. Harding and Grange (2018, 1, pp.4-5) noted the positive impact of peer working, but this was also following training in the intervention: '*The students were enthusiastic when working in groups. They appeared engaged when discussing with their peers and more willing to answer questions/ make suggestions when validated by the opinions of their peers'.*

(viii) Complexity

This project was ambitious in scale and in design, in trying to implement a number of assessment innovations (innovation being interpreted as being underpinned by our self-

regulatory assessment framework) (EAT, Evans, 2016). The projects were tied together by design protocols, and emphasis on the application of core principles which are:

- Shared beliefs and values
- Student-staff partnership
- Inclusive
- Sensitive to context
- Holistic
- Integrative
- Agentic
- Engagement in meaningful learning experiences - relevant
- Sustainable

There has been much debate around whether we should be chasing student engagement and satisfaction in order to enhance the quality of the student learning experience; such arguments seem to ignore the role of the student in the process harking back to a transactional view of learning (vessels to be filled), rather than aiming for transformational learning (changing as a person- being able to see things differently).

As already noted the relationship between engagement and student learning outcomes is not clear cut and nor is it in the case of student satisfaction and learning outcomes. Should we be chasing student satisfaction? The relationship between student satisfaction and learning outcomes is not straightforward. In 'the peer support for undergraduate research project' while marks increased, failure reduced, student satisfaction actually declined (Ford, 2018). Similarly, Spencer (2018) found marks improved for the intervention group but that

satisfaction was lower for this group compared to the control group. Knowing more about your learning can make you less satisfied.

In many of the case studies relationships between variables were identified but this does not tell us about causation. For example, Ford's (2018)students who attended the 'Peer learning to support undergraduate research' sessions did better but was it the case that more motivated students were more likely to attend in the first place?

It was noted that across a number of projects that the feedback orientation of students was relatively immobile (Lotti, 2018; Spencer, 2018), although enhanced in the peer learning project (Ford, 2018). It is hypothesized that this may link very closely to conceptions of learning, prior experiences of learning, and ability to also include self-regulation skills. Similarly, using Smith et al.'s (2013) assessment literacy survey, there was little change in 'minimum orientation effort' across a number of projects suggesting that this is quite intransigent to change, and may take concerted effort. Also, Lock (2018) while she found that students who engaged with feedback did better than those who did not, using the Feedback Orientation Scale (Linderbaum & Levy, 2010); findings did not indicate statistically significant changes for all dimensions of the FOS scale, suggesting the need to consider what variables are most important. There is also a need to look at individual as well as group data. In Lock's case study is was students' self-efficacy in relation to feedback that increased, further analysis could explore this variable in relation to other dimensions of the scale further.

Another key finding using the EAT framework is that there was less change in students' perceptions of their engagement in assessment design compared to the literacy and feedback dimensions (Spencer, 2018). This may reflect the perceptions of students about their role in assessment design, and may also be indicative of what opportunities the curriculum is giving students to get involved more centrally in aspects of assessment design.

It is evident that tools used to promote student understanding may increase their awareness of what they cannot do and, or are less good at. Support needs to be factored in to assure students that' knowing what you don't know' is a good thing. (Ford, 2018).

Just as Fair and Harris (2018), found that those who did well using self-assessment, also felt that the approach enabled them to adopt a minimalist/ surface approach to learning. Thorpe and Telford (2018) actually found that students who participated in an online intervention did worse than those who did not engage. It is important to explore more deeply the role of individual and contextual variables impacting this pattern and also whether the online activity confused rather than supported learning for these students. Did the activities actually distract from what was going to be assessed, and/or did the focus on previous questions narrow the students' learning so they were less prepared for their final assessments? Is it possible that efforts to support learning may encourage an instrumentalist approach among some learners (Torrance, 2007).

Spencer (2018) found that students engaged in her intervention scored themselves more harshly on their engagement with assessment and feedback than those in the control group. Again, this indicated that learning is taking place, in that students are more aware of what possibilities there are to support their learning and able to gauge more accurately what

their level of contribution has been. The pedagogical issue is about supporting students' enhanced assessment 'knowing' and to mobilise this to good effect, as for some students this could actually be disabling. Similarly, Gobbi et al. (2018) found students' perceptions of their ability to judge their own work accurately decreased; again this may reflect increased awareness of limitations. In both these cases, students perceptions and emotions need to be managed, and preferably by supporting students to develop emotional regulation skills (Vermunt & Verloop, 1999). Furthermore, Ford (2018) found that students' perceptions of their social awareness declined following the intervention, which again may reflect greater awareness of what they do not know.

In reviewing student learning outcomes from these interventions, from a critical pedagogy perspective it is important to explore who the innovations work for and who they do not and why. Engaging the apathetic student, an issue raised by Harding and Grange (2018) is a concern across interventions. It is also this subgroup who is hard to engage in the first place which skews results given it is usually those more motivated that we are discussing in our results when we need to be tapping into those who are not engaged; there are no easy answers here, although integrating initiatives into the taught curriculum is a clear way of trying to access this difficult to reach population. A key moral dilemma is that if we know, and can prove that certain activities have positive impacts on students, should those activities be optional? However, caution is also needed as often assumptions are made about so called non-engagers. From a community of practice perspective non-engagement can be seen as also non-collegial, but from a selfish perspective, some students who choose to not engage do very well. So there are two issues here, firstly the moral imperative

regarding students contributing to knowledge through sharing and collaborative action and fundamental to the professions; and secondly, the need to address the needs of those non-engagers who do poorly through such actions. Reaching those who do well and do not engage is a very difficult proposition although not impossible one, as it can be addressed through assessment design.

> Students like to engage with their peers in both discussion and peer-peer group teaching settings. They find these types of student-focussed activities beneficial to their learning and understanding of assessment tasks. Students, once they have experienced it, also see benefit in engaging with staff in elements of assessment design, e.g. the development of assessment specific marking criteria. However, there are subsets of students that are apathetic to these types of activities. Engaging these students is extremely challenging and frustrating. (Harding & Grange, 2018, 3, p. 2)

In trying to shift student perceptions, interventions can also have undesired impacts as noted by Fair and Harris (2018) where they found after implementing a focus on self-assessment as part of online module delivery, two thirds (67%) of students felt that self-assessment allowed them to coast through the module with the minimum amount of effort required to pass it. To address this issue they concluded that more attention needed to be placed on developing students' assessment literacies before asking students to start using self-assessment marking criteria.

(IX) Sustainability

We can consider sustainability from a number of perspectives:

- Individual and team professional learning accrued through being involved in the project. Continued application of ideas – further development of ideas/ refinement of research beyond the length of the project.
- Impact on student learning beyond the projects (not considered in this project)
- Impact on colleagues' and students' learning beyond the immediate interventions
- Impact on curriculum development– integration of ideas into modules/ programmes
- Impact at the University level: Development of a research-informed community of practice.
- Development of further projects

In examining the success of this project, we can see tangible evidence of addressing the majority of the dimensions outlined above. A key learning gain was the impact it had on individual team members' professional development, understanding of curriculum design and student need s as articulated through interviews and reflections on practice. The project promoted professional conversations around pedagogy; it improved understanding of the interconnected nature of all aspects of assessment and impact on curriculum delivery. The project reaffirmed the relevance of the EAT Framework; it raised awareness of the role of individual differences, and the impact of different elements of assessment design on student learning. Of significance is that six of the team are now leading further research and practice projects building on the work undertaken as part of the Innovation Funding.

> Design of interventions [need to be] focused on tackling issues relating to social interaction, anxiety, and confidence in the classroom. On the level of scholarship, I am going to do more research on how I can support them better in the classroom context. I also intend to introduce confidence-building exercises at the start of each module. On a wider level, I want to do more work on this with colleagues in my academic discipline in 2018-19. (Spencer, 2018, 3, p.3).

> Ensuring a tighter focus on to raising students' abilities to self-assess the work in future projects. The aim is to increase the amount of preparatory work with students before introducing an intervention. Further interventions will be designed as more part of a process rather than a one-off 'event'. However, this process still relies on students, to bring their work for comment to a particular tutorial rather than working on this activity across a series of classes. (Thorpe & Telford, 2018, 3, pp. 8-9)

> Next time I would allocate more time for communicating the intervention to the students as well as to the Postgraduate Teaching Assistants (PGTAs) who are marking the problem sheets and hence giving feedback and monitoring student engagement with the intervention. I would also use the EAT wheel more so that students can visualise how their perceptions and understanding of assessment and feedback are evolving over time. (Perisic, 2018, p. 6).

Key learning points can be evidenced in all projects, a snap shot of reflections is included below:

> I have found it very rewarding to investigate the effects of interventions and to see their real effects on students, rather than only making assumptions from MEQs (the response rates of which are often low, and may be the only dissatisfied students). Working on the project has made me think about the **link between my teaching and students' learning,** particularly how to work with students to increase **their independent learning**, between first and final year. (Lock, 2018, 3 p. 2)

> Many hours can be spent providing very detailed feedback, but we know little about whether/to what degree this is understood and/or actually informing student progress**. I'm much more aware of this now when training markers, or marking myself.** There are a number of factors that determine how a student interprets feedback, so I'm more aware of this in my personal academic tutor role. This is also related to the emotional impact on students of written feedback. (Pettit, 3, p. 1)

> I have always been an enthusiast of enabling greater autonomy, creativity and self-direction in learning and **I am now convinced that this can be enhanced by introducing self-assessment.** I am also sure that it can be successfully applied to a range of modules and disciplines. I also feel that it is a very good way to provide detailed and highly targeted feedback to students. It also ensures a level of marking consistency across staff/tutors. It does not really make marking any quicker. (Fair & Harris, 3(1), p.1)

A key success is to see insights from the projects being implemented into curriculum design as part of an on-going process that is sustainable beyond the life of the

project which was one of our initial goals. Main areas of further development are highlighted in Table 2. The team has also been engaged in wider dissemination projects across the university and also externally through conference presentations (ESLTIS, 2017), and with further work planned.

Table 2: Embedding innovations in curriculum design

Project	**Approaches being implemented into curriculum design**
Fair and Harris	Integration of self-assessment into modules supported by work on assessment literacy with students.
Ford	Scaling up of first year peer learning support, enabling timetabled sessions for all first years. Developing effective processes for recruiting and training peer leaders; Improved understanding of resourcing issues; Facilitating debriefing sessions with peer leaders.
Gobbi et al.	All decisions made with the intervention will be formally integrated into the module. Changes have been designed for nursing modules for the 2018/19 with an increased focus on transition from structured learning to more independent learning during the first year. Specifically: The following were fedforward into the next module in the second semester, to be fully integrated into the module 2018/19 • Search strategies how to use search engines more effectively • Level descriptors= more explanation and examples • Transition focus • Marking criteria to be amended • Marking guidance to be streamlined • Ongoing staff development
Harding and Grange	Integration of assessment literacy ideas into curriculum. Supporting students as teachers.
Lock	Exploring how to support independent learning and looking into how to engage colleagues
Lotti	Implementation of a more systematic diffusion of resources aimed at developing and supporting self-regulated students. The core principles are already diffused to many second and

	third year modules in Economics. Recommending the introduction of workshops aimed at developing self-evaluating skills and a culture of active participation to the feedback process. The activities should be concentrated in the first semester of first year core modules and then reiterated in the second semester and/or in the second year.
Mashanovich	Refining of approaches for further interventions. I will implement both in-class tests and assessment workshops in year 2, year 3 and MSc teaching from next year.
Spencer	Interventions are being incorporated into first year teaching programme. In addition to embedding assessment literacy sessions into the first-year teaching, there will be more attention given to assessment deadlines across the programme to minimise crowding of submission dates. Informal exercises will be introduced at the start of the semester to help students feel less anxious when working together, and more informal social events with staff will be scheduled. The programme team will also be discussing how we can better support those students who are likely to drop out of enrichment activities. The work on what constitutes a good essay in this discipline has been incorporated into first-year work. Ideas from the second workshop on marking criteria have meant that colleagues have been encouraged to post marking criteria on the module VLE sites and discuss them with students. PATs have been asked to discuss implementing feedback (the focus of workshop 3) with students. The Director of Programmes is now required to review proposed assessment deadlines on all the programmes before the start of the academic year to ensure they are spread out and manageable. Further workshops will address dealing with negative feedback; and developing self-evaluation skills.
Thorpe and Telford	More focused interventions being implemented in Law and importance of addressing underpinning issues in curriculum design
Perisic	Refinement of mathematics curriculum to support student understanding.
Pettit	We have already revised all assignment feedback to specifically include (1) strengths, and (2) Areas for progress. We are discussing balance of formative/summative feedback. We are encouraging students to discuss their previous feedback with current module staff/supervisors for continuity. We require students to identify 2-3 specific goals for the current

	(supervision) module, based on previous module feedback and recommendations.

Summary of key learning points

This project was ambitious and complex. Through undertaking it we were able to explore, as a team, the developmental process to inform further development. Key stages and issues in developing interventions are summarised in Figure 2. The development-evaluation-implementation process draws on MRC (2008, p. 8) research, and that of Nesta (2012, 2013, 2014); and WHO (2008, 2009, 2011). The key overarching themes emerging from the data and reviews of the literature to support experimental innovations include:

- ensuring ownership of the innovation at the local level –designed and implemented by the team (staff and students) with central support BUT not centralised design to address (**ownership / responsibility / agency / autonomy**);
- employing integrated approaches that build and develop support from all stakeholders **(connected**);
- embedding innovations within curriculum design and delivery and not as additional curriculum offer (**sustainability**);
- training to support shared understandings of initiatives for staff and students (**research-informed principles** - **community of practice**);
- ongoing evaluation to support fine-tuning of projects to ensure relevance, and appropriateness of innovations for all (**flexibility and inclusion**);
- effective dissemination of findings from innovations to support pedagogical enhancement, and to build momentum (**transfer and adaptation**);
- acknowledgement and reward for staff and students involved in researching, developing and informing practice (**validation**).

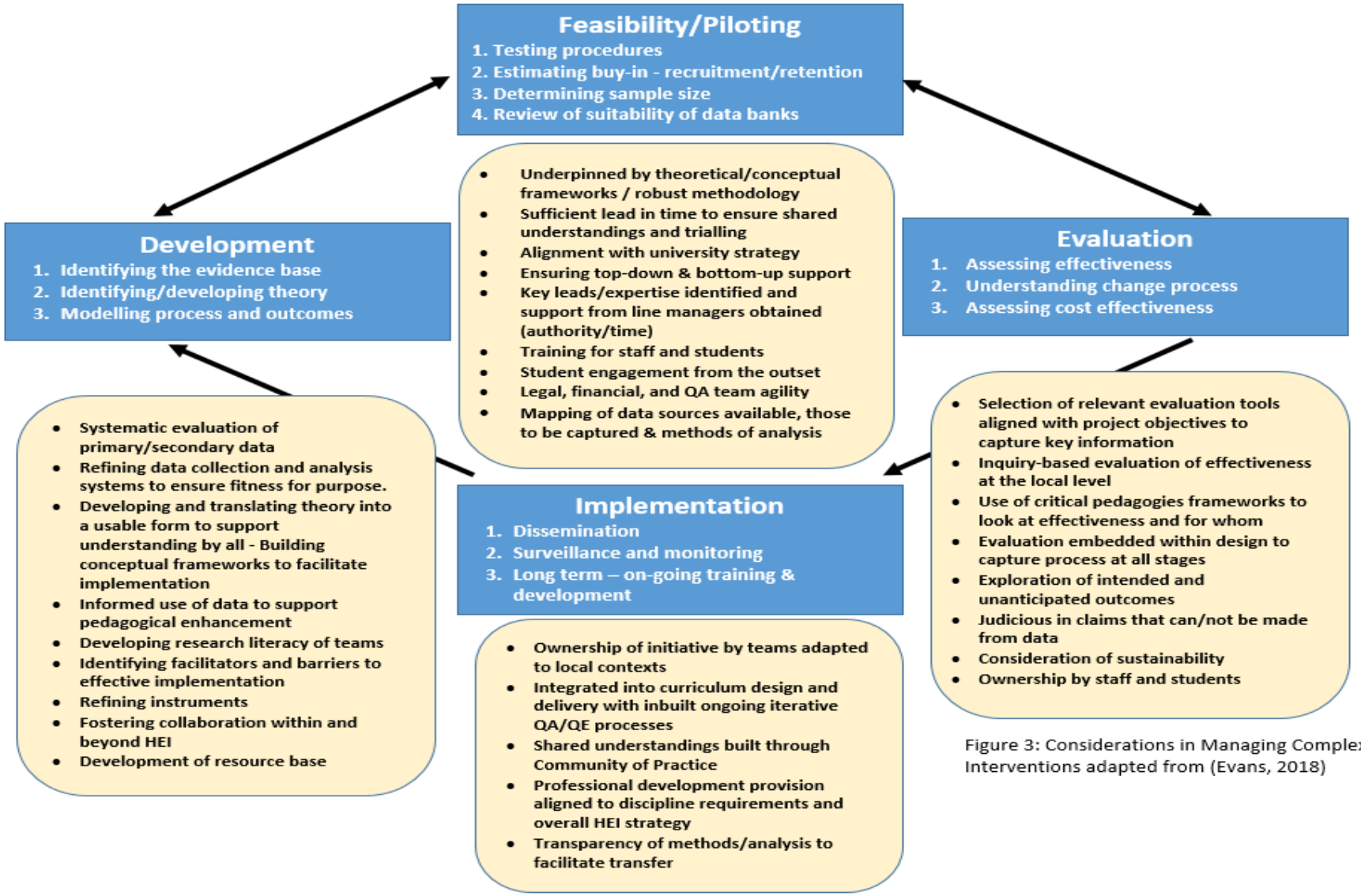

Figure 3: Considerations in Managing Complex Interventions adapted from (Evans, 2018)

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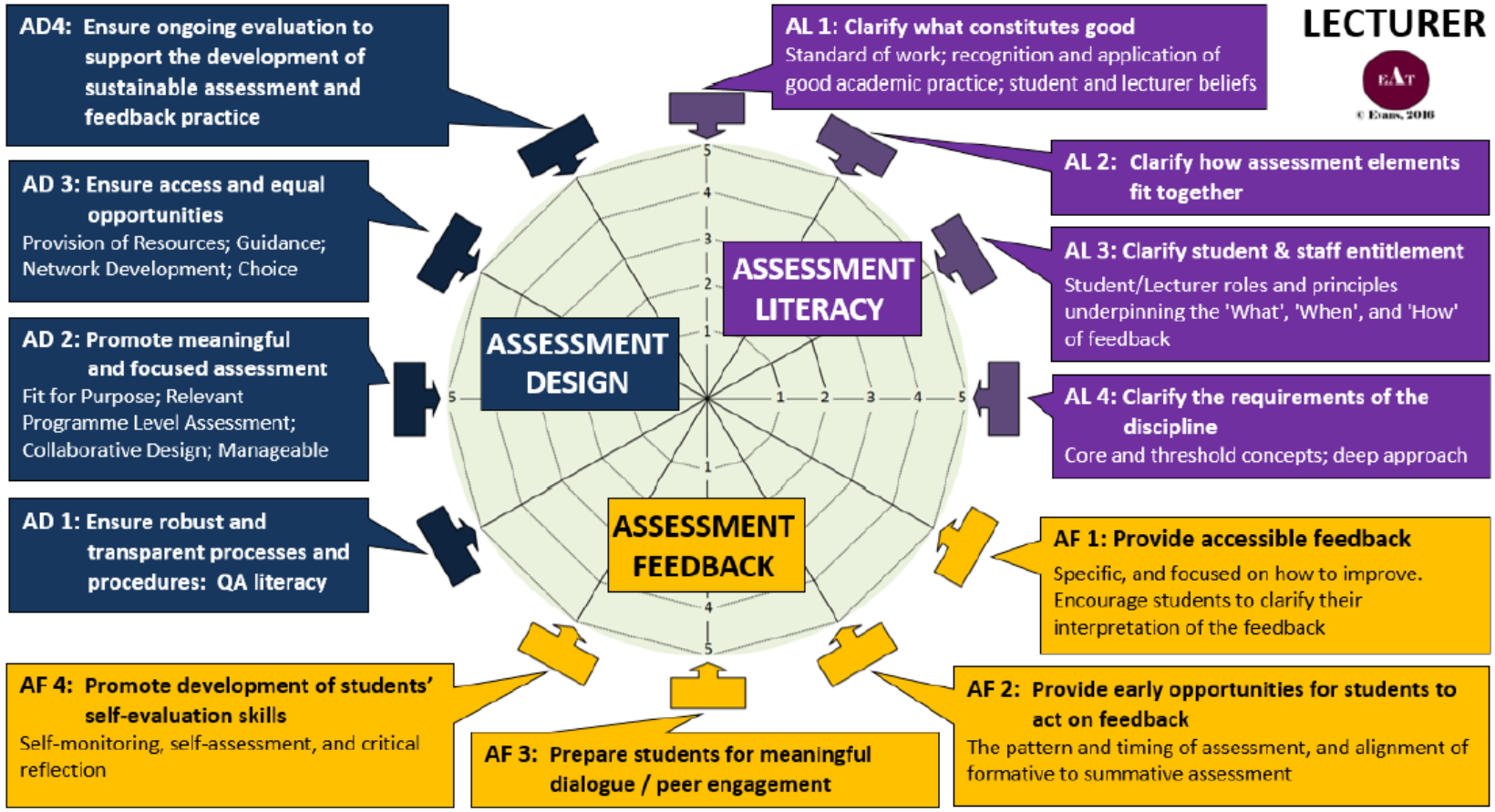
APPENDIX B: EAT areas document



APPENDIX D: EAT areas student document