Engaging Students with Assessment and Feedback: Improving assessment for learning with students as partners

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Abstract
Within the Higher Education sector in the UK, it is acknowledged that the area of 'Assessment and Feedback' receives consistently poor levels of satisfaction from students when they complete module level feedback, course level feedback and the National Student Survey (NSS). There is evidence to suggest that this problem is pronounced within Schools of Architecture, particularly with the assessment and feedback of design work. This case study describes reflective practice at Portsmouth School of Architecture, UK, where academics worked in consultation with students to identify the issues. The aim of the project was to evaluate assessment and feedback strategies from across the School resulting in the creation of a new and innovative set of 'Assessment for Learning' tools produced with students as partners. These tools include: a refined marking matrix, an improved 'design review' and a 'lexicon' for marking design projects to enhance understanding and autonomy. This case study also explores how alignment and enhancement of learning through assessment and feedback and the quality of assessment tools has the ability to increase students' confidence and assessment literacy, their overall satisfaction and levels of autonomy.

Key words
Assessment Criteria; Feedback; Assessment Literacy; Assessment Lexicon; Partners; Design.

Introduction

In 2012, the Higher Education Academy published two papers relating to the Higher Education sector in the UK, *'A Marked Improvement'* (Ball et al., 2012) and '*10 Strategies to Engage Students with Feedback'* (Higher Education Academy, 2012). These publications acknowledged that the area of 'Assessment and Feedback' received consistently poor levels of satisfaction from students when they complete module level feedback, course level feedback, and the National Student Survey (NSS). In-house analysis of the NSS data (HEFCE, 2012) also indicated that this problem was particularly pronounced within schools of architecture, where 'design' is the main focus of assessment.

Academics at Portsmouth School of Architecture recognised that this national problem was also a local problem: students questioned the allocation of marks for design projects and also expressed dissatisfaction with the quality of written feedback for design modules. Focus groups revealed that students also felt that the assessment of design projects was too subjective and that they did not think that the grading criteria were clear: they stated that they did not understand the vocabulary used and they could not ascertain the difference between classifications of work; this lack of certainty caused stress and anxiety for both students and staff.

This case study presents an account of reflective practice at the School, which set out to improve the quality of assessment tools, to enhance assessment literacy and to build students' confidence in the processes. To achieve these aims, academics consulted students' focus groups to clarify the issues and frustrations, and subsequently worked with student representatives from the BA (Hons) Interior

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Architecture and Design course to create and refine tools that are now used at formative and summative stages of the design projects.

This reflective process consisted of four phases: Phase 1 Context: to complete a literature review and to analyse the data from the National Student Survey (NSS) and module level feedback; Phase 2 Method: to conduct focus groups with students and workshops with academics from across the School of Architecture; Phase 3 Development: to create a new set of 'assessment for learning' tools with students as partners and evaluators; and Phase 4 Results: to evaluate the effectiveness of new assessment tools through module and course level feedback and module grades.

This case study concludes with reflections on this four-year process, which has resulted in an overhaul of assessment tools within Portsmouth School of Architecture, tools that have enhanced the student experience of assessment and feedback. The analysis of the new methods and processes suggest a significant improvement in the alignment of learning (Biggs, 1999), the quality of assessment tools, the consistency and quality of academics' feedback, improved confidence and levels of autonomy among students and significantly increased module grades and scores in course related feedback.

Phase 1: Context

The literature review focussed on current thinking in higher education regarding assessment and feedback. This enabled a deeper understanding of the national context and its relationship with current practice within the School of Architecture.

In 1998, Black and William reported on meta-analysis of assessment, based on 9-years of research, analysing more than 250 articles in over 160 journals. It was discovered that *'a consistent feature across the variety of these examples is that they show that attention to formative assessment can lead to significant learning gain',* (Black & William, 1998:11-12). Their research was particularly influential to primary and secondary education; however, the methods identified are relevant to the Higher Education context and describe a model for '*Constructive Alignment*' (Biggs, 1999) and *'Assessment for Learning'* in Higher Education (Sambell, McDowell & Montgomery, 2013).

Analysis of the National Student Survey and Select Committee reports also revealed a growing recognition within the higher education sector in the UK, that assessment practices had been failing students for many years and were *'not meeting the needs of students, employers, politicians or the public in general*'. (Ball et al., 2012:7)

Ball et al. (2012) refer to the '*massification'* or expansion of Higher Education provision and the challenges associated with growing diversity in the student body. With this comes the necessity to focus upon students as learners, to enhance the learning experience and their levels of satisfaction, particularly through the enhancement of assessment and feedback tools. The document states that:

> Assessment shapes what students study, when they study, how much work they do and the approach they take to their learning. Consequently, assessment design is influential in determining the quality and amount of learning achieved by students, and if we wish to improve student learning, improving assessment should be our starting point
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> (Ball et al., 2012 p.9).

Sambell et al (2013) define the criticality of fully integrated Assessment for Learning in Higher Education and provide a clarification of assessment principles, which include six characteristics of effective practice: 1) Authentic assessment 2) Balancing summative and formative assessment 3) Creating opportunities for practice and rehearsal 4) Designing formal feedback to improve learning

5) Designing opportunities for informal feedback 6) Developing students as self-assessors and effective life-long learners (Sambell et al., 2013). This is a principle that is particularly pertinent to this research project as the authors' state:

> If students are to be active in their own learning they need to be able to make decisions for themselves, decide what approaches to take and evaluate their own progress. There should be opportunities for students to be active participants in assessment processes and develop assessment literacy
>
> (Sambell, 2013).

In addition, there has been a growing appreciation that forming meaningful partnerships with students can enhance engagement and attainment through the process that put qualities such as 'trust, risk, interdependence and agency' at the heart of the learner-teacher relationship (Healy, Flint & Harrington, 2014). It has been demonstrated that joint ownership and joint decision-making can challenge students and increase their depth of learning (Hubbard et al., 2017).

These significant publications have underpinned the need to reform assessment and feedback within the Higher Education sector and suggest tried and tested methods for performance enhancement based on integrating assessment with teaching and learning, and by putting the student experience at the heart of the process. The NSS data has demonstrated that student satisfaction is particularly poor in the area of assessment and feedback (questions 5-9) with full-time students in England gaining an average of 71% and this figure has not significantly improved since 2012 to 74% in 2016 (HEFCE, 2016).

For the BA (Hons) Interior Architecture and Design course in Portsmouth School of Architecture, UK, the average percentage for 'assessment and feedback' was 7% lower than the national average at 64% in 2012 (HEFCE, 2012). These data also demonstrated significant problems in response to Q6. *'Assessment arrangements and marking are fair'* and in Q9. *'Feedback on my work has helped me clarify things I did not understand',* with both questions scoring only 50%. Module level feedback for level 6/ year 3 design modules was analysed as the timing of delivery correlated with the administering of the NSS. This revealed that student satisfaction regarding assessment and feedback in design modules with the most concerning factor being workload. These results fuelled the decision to work with students from this course to develop and test *'assessment for learning'* tools in order to improve student satisfaction overall.

Phase 2: Method

In order to gain a more substantial understanding of the quantitative data drawn from student feedback and to ensure that students were involved in the research from the outset, two focus groups were organised to allow for a triangulation of research methods. The first focus group consisted of 2 students from each year group across 2 undergraduate courses (12 students in total) and the second focus group consisted of 6 students from the Masters of Architecture course and 3 from each undergraduate year group. Students were recruited through the membership of the 'Student Staff Consultative Committee' within the School of Architecture where students have experience of discussing issues around student experience on behalf of their year group. This selection ensured that participants were compatible (Carey & Asbury, 2012:28) and that the student voice from across the School was heard to enable a deeper understanding of the students' concepts of feedback and how they perceived the benefit to their learning for both short term and long-term gain (Carver, 2016). Ethics were considered regarding the stress levels of participants; assessment and feedback is often a contentious issue for students as a measure of their personal competence and participants were made aware of support services available if required (Carey and Asbury, 2012:22). In addition, consent was sought from participants and findings were anonymised in

transcripts and recording of results.

The potential limitations of using focus groups were assessed prior to the event so that the following factors were taken into account when analysing the data: bias and manipulation, false consensus, the difficulty in distinguishing between an individual view and a group view, as well as generalisations (Litosseliti, 2003 p.21). The focus groups were conducted with a set of standardised open questions targeted on assessment and feedback, to suggest rather than prescribe, as a precondition. Follow up questions were used when a lapse in discussion was observed. The directive phase of the focus groups picked up any contradictions within the discussion and drew the session to a close. The analysis drew together and decoded common themes in order to collate key findings (Flick, Kardorff, Steinke, & Flick, 2004:220-221); this provided a strong foundation for qualitative and interpretative analysis.

Experiential learning (Kolb, 1984; Dewey, 1938) is emphasised in the School of Architecture, a framework that includes creative, iterative, and cognitive processes where knowledge and understanding is constructed by the individual (Vygotsky, 1978). The School also succeeds in creating a 'community of inquiry' (Dewey, 1938) that encourages respectful and critical collaboration with others (tutors, students, practitioners, communities and clients); respectful and trusting relationships are established. This context enabled a natural transition towards a 'partnership learning community' (HEA, 2014:8) whereby students became engaged in the scholarship of teaching and learning and it was made explicit that they were active participants in their own learning (HEA 2014:8): together academics and students discussed and defined the problems with assessment and feedback within the School, refined the methods and created new tools and evaluated the effectiveness of the new tools.

The student focus groups revealed the following key themes:

- Students did not share our interpretation of several of the questions in the National Student Survey/ module level feedback, including the question *'Assessment arrangements and marking criteria are fair'.* When responding to this question, the students noted that they thought students' view of whether or not the arrangements were fair was influenced by the mark they received (if the mark was good, then the arrangements were fair). They confirmed that when answering this question, they did not consider the Learning Outcomes and Grading Criteria, the formative feedback provided, that tutors engage in moderation processes, paired-marking, double marking or the fact that marks are checked by external examiners.
- When asked about the question *'I am clear about what I need to do to be successful in this unit',* the students noted that they were not always clear about how to be successful on a design unit and only half the students said that they referred to the Learning Outcomes and the Assessment Criteria; they noted that this was because the words were too vague or generic.
- When asked about the question *The criteria used in marking have been clear in advance (of summative assessment),* the students noted that it was not always clear what the assessment criteria meant or how higher marks could be achieved. The students suggested more coaching in their first year of study could be useful to help them learn to use feedback and to read and understand learning outcomes and assessment criteria.
- As part of the conversation, the academic leaders of the focus group discussed approaches to learning with the students. The students noted that learning about 'teaching and learning' could be helpful as they would better understand the processes and how tutors make judgements about work; they also suggested it might help the students engage in constructive feedback more readily.

- The students noted that seeing examples of work from previous years was helpful and that it could also be useful to involve the students in writing the Learning Outcomes and Grading Criteria – they said this might help them to understand the vocabulary and have a deeper understanding and ownership of what is expected of them.
- The students noted that they couldn't be bothered to complete module level feedback unless they were unhappy with the module delivery. It was clear that the students did not understand the significance of module level feedback and the impact the feedback has on the development of teaching and on learning. They stated that the timing does not seem relevant to the students and that they do not believe that an on-line feedback form is valued. The students expressed that they would rather talk directly to their tutors (like the focus group) and work more collaboratively to improve teaching and learning.

It was evident that the students were keen to be more actively involved in their own learning and to have a deeper understanding of assessment and feedback methods. It was also clear that tutors were not sharing and explaining the broader assessment processes and that small adjustments to what tutors believed to be robust tools, would have a significant impact on student learning and satisfaction. The most concerning comments from students was their perception that the marking criteria were opaque and academics recognised that this needed urgent attention.

Following the students' response, a series of 'Learning and Teaching' workshops about 'Assessment for Learning' were conducted for academics within the School of Architecture. In order to encourage a collective focus upon the problems, findings from the student focus groups were disseminated for discussion. In preparation for the workshops, colleagues were referred to the Higher Education Academy publications *'A Marked Improvement'* (Ball et al., 2012) and *'10 Strategies to Engage Students with Feedback'* (Higher Education Academy, 2012) and they were also asked to consider the 6 core strands of 'Assessment for Learning': develops students' abilities to evaluate their own progress and direct their own learning; is rich in informal feedback; is rich in formal feedback; offers extensive confidence building opportunities and practice; has appropriate balance of summative and formative assessment; emphasises authentic and complex assessment tasks (Sambell et al., 2013). At the workshop, colleagues were asked to work in groups of 6, to respond to the following questions associated with design modules:

- Consider how we can improve our students' responses to questions about feedback and assessment in unit and course feedback (NSS).
- Critically review the mechanisms we use to provide feedback and assessment (Assessment for Learning). Consider both the students' and the tutors' experience.
- Consider how we can further enhance our practice and apply effective Assessment for Learning methods with greater consistency (thereby improving student engagement and their academic standards).

The ideas proposed in response to these questions were very detailed and extensive and had the potential to lead towards much improved 'Assessment for Learning' practice within the School. They can be summarised as follows:

- Independent learning: provide more coaching in first year so that students understand the 'Assessment for Learning' processes and also plan a programme of events throughout the courses that help them to 'learn about learning' (meta-learning). It was suggested that this could help to manage students' expectations, their transition to Higher Education and also encourage greater independence. It was also suggested that first year students could keep Feedback Diaries (a practice that could continue throughout the course) and that the design

review model be developed to improve student engagement and responsibility for recording feedback.

- Assessment artefacts: it was suggested that the load and type of assessment could be reduced so that students and staff were not overloaded and that tutors should explain how the assessment tasks relate to professional practice (thereby enhancing the students' perception of its authenticity). It was also suggested that students should have increased opportunities to have feedback on their portfolio of design work as it developed, not just on the projects.
- Clarity and consistency: it was suggested that students and tutors should have a shared understanding of the language used to describe Learning Outcomes and Assessment Criteria (a shared lexicon), and that this language should be used with greater consistency by all tutors and throughout the courses. Shared authorship was considered to be a positive approach that could enhance the students' sense of ownership of their learning. In addition, it was suggested that tutors work with students to help them understand the 'Assessment for Learning' processes so that they understand and trust that processes are fair.
- Learning Outcomes and Assessment Criteria: it was suggested that tutors should avoid marking just the end product and that they should mark and value the process too. Colleagues also discussed whether meaningful reflections on 'failure' could also be valued and marked (as significant learning can come from 'failure'). It was suggested that colleagues should check that the project briefs and programme of events helped students to achieve the Learning Outcomes and the Assessment Criteria. It was noted that greater analysis of exemplar work of different levels and exhibitions could help the students understand how to achieve higher grades – tutors should indicate how and why work is successful.

Phase 3: Development

The researchers reflected upon the issues identified in the first two phases of this research project and identified three innovative approaches to enhance assessment for learning. These approaches included tools that were designed in consultation with students:

- The development of a lexicon for marking architectural design projects (that includes language to define the differences between grade bands)
- A refined marking matrix
- Improved formative assessment through the 'Design Review'

The Lexicon for Assessing Design

The discussions with colleagues and students revealed the need to refine the vocabulary that was being used to describe Learning Outcomes and the associated grading criteria. This resulted in the creation of a 'lexicon' for assessing design projects (Table. 1), which begins to define the qualitative and quantitative characteristics of design assessment.

Table 1: Lexicon for Design Projects.

70%+ First Class 1st	60-69% Upper Second 2.1	50-59% Lower Second 2.2	40-49% Third Class 3rd	Less than 40% Fail
Quantitative: **Throughout. Integrated. Cohesive. Consistent.** Qualitative: Creative. Analytical. Critical. Breadth. Depth. Relevant. Evaluative. Wide-ranging. Salient. Inquiring. Informed. Discovery. Clarity. Control. Concept. Precision. Accuracy. Elegance. Secure Identity. Advanced. Appropriate. Poetic. Functional. Rigorous. Articulate. Sustained. Applied. Very well crafted. Refined. Very well edited. Ambitious. Engaging.	Quantitative: **Most aspects…** Qualitative: Creative. Analytical. Critical. Breadth. Depth. Relevant. Evaluative. Wide-ranging. Salient. Inquiring. Informed. Discovery. Clarity. Control. Ideas. Precision. Accuracy. Elegance. Sense of Identity. Advanced. Appropriate. Poetic. Functional. Rigorous. Articulate. Sustained. Well-edited. Engaging.	Quantitative: **Partial. Evidence of some…** Qualitative (in parts): Analytical. Informed. Breadth. Salient. Discovery. Applied. Inconsistencies. Emerging identity.	Quantitative: **Begins to…may be completed but lacks…** Qualitative (lacks): Breadth. Depth. Understanding. Analysis. Evidence. Clarity. Development. Rigor. Cohesion. Resolution. Functional Rigor. Inconsistent. May lack precision. Confidence. Control.	Quantitative: **Limited or no evidence of…** Qualitative: The work submitted fails to…
Fluent	Confident	Competent	Basic	Limited

The 'lexicon' defined what was valued by assessors and also began to tackle the problematic nature of assessing work that academics might describe as being 'creative', 'poetic' and 'cohesive'; these qualities are important in well-resolved design projects but students can struggle to comprehend the intangible nature of these characteristics.

It was also clear that a refined lexicon cannot function well unless it is coupled with conversations with students to ensure that they have a shared understanding of the meaning and values that are represented by the words; assessment for learning is an iterative process and dialogue with students should be at the centre of this process:

> Creative subjects like music and art often provide particular challenges when it comes to assessment. Where possible, it may be helpful to involve students in establishing or negotiating the criteria for assessment, so that they fully understand what is expected of them (Brown, 2005:84).

Although the lexicon goes some way towards providing a common understanding of assessment with the students, further research is required to develop this tool. The authors have begun a

comparative analysis of the taxonomies of Bloom (1969), Anderson and Krathwohl (2001) and Biggs (1999) to understand the extent to which these models can support the cognitive operations and knowledge associated with architecture and design and how they can be enhanced to accommodate these subjects.

A Refined-Marking Matrix

In developing and refining the marking matrix for design units, it was important to explain to the students that the module Learning Outcomes aligned with the course descriptor and benchmark statements in Art and Design and Architecture. The starting point was to treat the Learning Outcomes as fixed and to develop the language of the criteria by which they were assessed, with the students. To address the students' immediate concerns, the academics arranged for 6 second-year/ level 5 portfolios of design work from the previous year to be available in the studio teaching space; the portfolios represented the full range of marks from fail to 1st class. Using the Learning Outcomes and a blank assessment matrix for the unit, the second-year students were asked to work in pairs to describe the different characteristics of the portfolios they were analysing, for example, for Learning Outcome 1 they described what a fail 'looked liked' through to what a first-class piece of work 'looked liked'. They then joined with another pair of students to summarise and agree their findings.

Academics and students then discussed the analysis as a group and were able to agree terms to describe the characteristics of the different grade bands (the criteria). The descriptions were very precise and described the qualities that academic staff look for when assessing design projects. The academics collated the students' responses and organised them in the form of an assessment matrix to be used to provide formative feedback and summative assessment, a document that enabled a shared understanding of the criteria. As an extension of this fruitful conversation, academics also discussed how the different Learning Outcomes were valued when they were assessing work; this caused the teaching team to consider whether they were unintentionally showing preference to some Learning Outcomes over others when marking, for example, giving more weight to 'representation' than the 'design process', which architecture and design educators say they value. Academics agreed that this might be possible, so also introduced a percentage weighting for Learning Outcomes that was agreed with the students. This was a simple but significant process that exemplified the benefits of working in partnership with students to enhance their learning experience.

The positive results led the academics to continue the iterative process of refining the assessment tools with the students, colleagues and with feedback from academics from other institutions.

Table 2. Assessment Matrix for Design Projects.

	Learning Outcomes	**70%+ 1st**	**60-69% 2:1**	**50-59% 2:2**	**40-49% 3rd**	**-40% Fail**	**%**
LO1	**Analyse a building, its site and context and critically judge how these discoveries impact on a design proposal; apply relevant findings to concepts and designs**	Building/site/context analysis has been completed; analysis has breadth and depth and relevant theories, tools and tactics have been articulated and applied; a range of methods have been used and salient discoveries have informed the concept and design and have been presented with great clarity.	Building/site/context analysis has been completed; analysis has breadth and depth; a range of methods have been used and salient discoveries have informed the concept and design.	Building/site/context analysis has been completed; analysis has breadth and depth and salient discoveries inform some aspects of the concept/design.	Building/site/context analysis has been completed but lacks breadth, depth and understanding; analysis may not inform the concept or design.	Limited or no evidence that analysis has been completed to inform the design. The work may be incomplete/ inaccurate.	25%
LO2	**Interpret and evaluate the needs of a selected client and the relationship to the project site; Develop and substantiate the associated project brief through the design proposal.**	Evaluation and interpretation of the brief and the client's needs have been completed and understanding informs all aspects of the design; needs are fully integrated into a cohesive design proposal.	Evaluation and interpretation of the brief and the client's needs have been completed and understanding informs all aspects of the design proposal.	Evaluation and interpretation of the brief and the client's needs have been completed and understanding informs most aspects of the design proposal.	Basic evaluation and interpretation of the brief and the client's needs has been completed and basic understanding informs some aspects of the design proposal.	Limited or no evidence that the brief and the client's needs have been understood and applied to the final design proposal.	
LO3	**Generate alternative design concepts, in response to the site, the project brief and relevant precedent; refine design proposals through a process and critical analysis**	Clearly articulated concepts have been applied to the design with consistency and control. Concepts have been informed by an analytical and critical response to the site, the brief and relevant precedents; concepts may also be informed by reference to theory, values and ethical position. Concepts and designs have been analysed, tested and refined using a sustained analytical process of experimentation using models,	Clearly articulated concepts have been applied to the design with consistency. Concepts have been informed by an analytical and critical response to the site, the brief and relevant precedents. Concepts and designs have been analysed, tested and refined using experimental models,	Concepts have been informed by an analytical and critical response to the site, the brief and relevant precedents; concepts and designs have been tested and refined using experimental models, drawings and prototyping.	Concepts have been informed by a response to the site, the brief and relevant precedents; concepts are described but may lack development, clarity or consistent application to the design.	There is little or no evidence of experimentation and conceptual development. Precedents may not have been analysed.	

	Learning Outcomes	**70%+ 1st**	**60-69% 2:1**	**50-59% 2:2**	**40-49% 3rd**	**-40% Fail**	**%**
		drawings and prototyping.	drawings and prototyping.				
LO4	**Create a three-dimensional design that is informed by a clearly articulated concept and that demonstrates both functional and aesthetic resolution.**	Three-dimensional design is very well controlled and is informed by a clearly articulated concept and responds to aesthetic and functional considerations. This understanding is applied to the design at all scales and in detail for some areas; the design is cohesive and poetic.	Three-dimensional design is well controlled and is informed by a clearly articulated concept and responds to aesthetic and functional considerations; the design is cohesive and poetic.	Three-dimensional design is informed by a clear concept and responds to aesthetic and functional considerations; the design is cohesive and most aspects are resolved.	Three-dimensional design begins to be informed by a concept and begins to respond to aesthetic and functional considerations; design may lack cohesion and resolution.	Three-dimensional design lacks conceptual clarity and/or functional rigour and/or aesthetic resolution.	45% LO4 & LO5
LO5	**Justify appropriate material choices and apply understanding to the design at all scales (macro-micro)**	Designs are informed by an excellent understanding of materials at macro and micro scales. Material and product choices reinforce the concept and support functional and aesthetic intentions. Materials, forms and their application have been informed by a sustained investigation of ideas using experimental models and prototyping. An attitude towards materials or a philosophical position will be evident.	Designs are informed by a very good understanding of materials at macro and micro scales. Material and product choices reinforce the concept and support functional and aesthetic intentions. Materials, forms and their application have been informed by a sustained investigation of ideas using experimental models and prototyping.	Designs are informed by a good understanding of materials at macro and micro scales. Material choices reinforce the concept and support functional and aesthetic intentions. Materials, forms and their application have been tested using experimental models and prototyping.	Designs communicate a basic understanding of materials and detail at the macro and the micro scales. Prototyping has been completed but lacks rigour and resolution.	There is little or no evidence of material understanding. Details may be incomplete or inaccurate.	
LO6	**Select and use appropriate representation and communication**	A range of Representation and Communication strategies, skills and creative methods have been well selected to reinforce and	Representation and Communication strategies and skills have been well selected to	Representation and Communication strategies and skills have been selected to	Representation and Communication strategies and skills have been selected to	Representation and Communication may be incomplete and/or inaccurate.	30%

	Learning Outcomes	**70%+ 1st**	**60-69% 2:1**	**50-59% 2:2**	**40-49% 3rd**	**-40% Fail**	**%**
	strategies and skills to convey the functional and aesthetic qualities of the design in a coherent and engaging manner.	communicate the concept and design at all scales; methods include 2D and 3D approaches. Methods have precision (where appropriate) and control. Methods are very well conceived and have been very well crafted using refined techniques. Graphic design is elegant and allows the story of the project to be expressed with great clarity. Design identity is expressed through the methods selected.	reinforce and communicate the concept and design at all scales; methods include 2D and 3D approaches. Methods have precision (where appropriate) and are mostly well controlled. Methods are well conceived and have been well-crafted. Graphic design is considered and allows the story of the project to be expressed. An emerging design identity is expressed through the methods selected.	reinforce and communicate the concept and design at all scales; methods include 2D and 3D approaches. Methods may lack precision, confidence and control in parts. Graphic design strategies will be evident but may lack refinement.	reinforce and communicate the concept and design; methods may include 2D and 3D approaches. Methods may lack precision, confidence and control in parts – some errors might be present. Graphic design strategies will be evident but may lack clarity and consistency.	There may be little evidence of appropriately selected strategies and application of skills.	

Improved Formative Assessment through the Design Review

The use of a marking matrix is not innovative in itself and examples can be seen throughout different sectors of education (Assessment Reform Group, 1998). The most valuable aspect of the marking matrix, particularly for the subject of design, is in how it can be used for both formative and summative assessment and the refinement of the lexicon adopted. Throughout a design project, students participate in studio reviews, a formative assessment of work where each student presents their design scheme to tutors and peers for verbal feedback and discussion. Prior to the development of the assessment tools, students would receive a brief hand-written note on the quality of their work, which did not always relate to the Learning Outcomes and did not always contain enough detail; on occasion the hand-written feedback was also illegible to students.

Through discussion with students, the marking matrix was introduced as part of the design review so that students could see where they were at that point in time. The matrix was filled in on a digital file (this may not be against all of the learning outcomes depending on the project stage) and clear typed notes indicated what the student needed to do to improve their grades. In order for students to trust and gain confidence in this approach, it was important that tutors 'honoured' the grade bands highlighted when work was assessed at the end of the project with a caveat that grades could go down if work shown at review was not provided at the point of summative assessment. The benefit to the students is that they should see (in most cases) the grade bands improving as they move through the project.

This method of assessing design modules is now being used with second-year and third-year students and academics have reviewed the matrix with the students to hone and refine the descriptions; academic staff are also analysing the precision of the matrix as they complete formative and summative assessment.

Phase 4: Results

Results from the introduction of new 'Assessment for Learning' tools within the Portsmouth School of Architecture were derived from interviews with students, module level feedback, course level feedback and NSS results, as well as analysing module grades and levels of student attainment through Board of Examiners reports. Academics observed that students had a much more confident understanding of the marking criteria and increased levels of assessment literacy. The students also had a clearer understanding of how to improve design projects, as the tools were used for both formative and summative assessment. This has led to greater engagement, motivation, trust, and agency, as students are better able to evaluate their progress and make improvements independently:

> Feedback is much more positive, the marking criteria is much more clear so it enables students to clearly understand what is expected of them to reach each grade boundary. The idea of splitting the marking criteria is excellent as it shows students which part of their coursework they need to work on
>
> (Comment from graduates, 2015).

It was also observed that academics are more efficient, precise and consistent when assessing work and providing feedback, and they too have improved their assessment literacy; there is now clear evidence to support the mark achieved for each piece of work.

In addition to the qualitative improvements described, an analysis of quantitative data also indicated that the tools were having a significant impact on the student experience. There were large increases in student satisfaction indicated in the National Student Survey data (Figure 2) sourced from HEFCE (2012-2016) where overall satisfaction in 'assessment and feedback' had risen from 64%

in 2012 to 80% in 2016, which was higher than the higher education sector average of 74%. Also, the responses to Q.6 *'Assessment arrangements and marking are fair'* had improved from 50% to 69%. Although this change is marked, there is still room for improvement and this requires further investigation. For Q.9, *'Feedback on my work has helped me clarify things I did not understand',* there was an increase from 50% in 2012 to 75% in 2016. All other questions in this area saw an increase from between 6-19%. The student feedback for the design modules also improved whereby the first module delivered in third-year increased from 51.8% in 2012 to 100% satisfaction in 2016 and the subsequent design module delivered in third-year increased from 70.7% in 2012 to 98.9% satisfaction in 2016.

Table 3. Assessment & Feedback, NSS results.

	NSS Assessment & Feedback Questions	**2012**	**2016**
Q.5	The criteria used in marking have been clear in advance.	68%	**81%**
Q.6	Assessment arrangements and marking have been fair.	50%	**69%**
Q.7	'Feedback on my work has been prompt'	75%	**94%**
Q.8	'Feedback on my work has helped me clarify things'	75%	**81%**
Q.9	Feedback on my work has helped me clarify things I did not understand.	50%	**75%**
	Assessment & Feedback Overall	64%	**80%**

Table for BA (hons) Interior Architecture + Design, University of Portsmouth from HEFCE (2012-2016)

Also, through analysis of 'Board of Examiners' reports from the School of Architecture, the number of good degrees awarded from the BA (Hons) Interior Architecture and Design course has increased from 46% in 2012 to 57% in 2016; although this may be the result of a complex blend of factors, academics believe the work to improve assessment literacy has made a positive contribution.

Reflections

This case study presents a four-year project where academics worked with students as partners to enhance assessment for learning tools.

The academics observed considerable benefits to engaging students in the refinement of their learning and working with them as partners, particularly as students made insightful contributions and pushed academics to improve pedagogic practice. The qualitative and quantitative data collected suggested that this project has improved the students' experience of assessment and has enhanced assessment literacy among lecturers and students. The project may also have contributed to the increased number of good degree classifications. The academics' observations have been supported by their external examiner who notes:

> The team have … embarked on a collaborative process by engaging students to understand and clarify their own understanding of feedback. The outcome is the production of an innovative assessment and feedback strategy with clear vocabulary. The new assessment and feedback forms have been written specifically for clarity, replacing 'edu-speak' with a clear language that can be clearly understood by all architecture and design students…The system implemented … is methodically clear because it has been researched and tested with students in the first instance
>
> (Appleyard, 2016).

Through this reflective and iterative process all stakeholders have improved assessment literacy and have increased levels of common understanding. The academics have also identified future lines of

inquiry and opportunities to further enhance the collective experience of assessment for learning. Firstly, to complete a more substantial analysis of alternative taxonomies for assessment and to refine the taxonomy for assessing design projects in consultation with students and colleagues from other schools of architecture and design. Secondly, to develop academics' partnering relationship with students and to improve others fields of pedagogic practice, particularly: engaging the students in a more structured process of meta-learning and introducing and evaluating the value of feedback diaries (as noted in Phase 2 of this case study).

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