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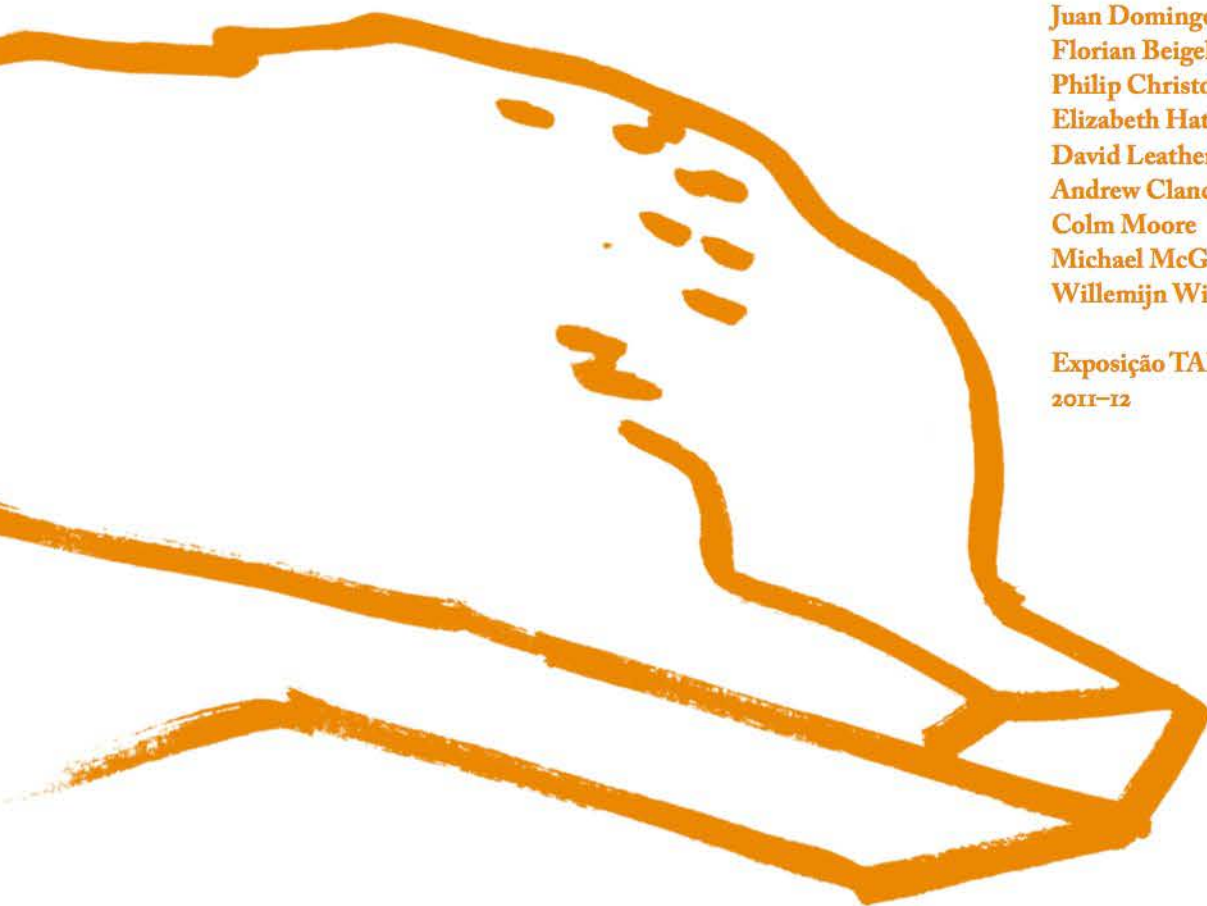
#04

ENSINAR PELO PROJETO TEACHING THROUGH DESIGN

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Fail better.

The potential of assessment in education for reflective practice

"How do you deal with students that are in danger of failing?" This was one of the more memorable questions during my interview for a position at the University of Limerick. As lecturers we might share, and in fact we do to a surprisingly large extent, a tacit understanding of what qualifies as 'good work' – and what doesn't. At the same time it is difficult, to say the least, to impart to the students a sense of quality and the ability to judge. *"You tell them plainly and explain clearly where and why they went wrong, what they can do about it, and offer your support in the process,"* I replied, or something along those lines. The problem, of course, is to be clear about the 'rights' and 'wrongs' (and if they exist in the first place) and hence about the criteria we apply to student work, and how to make them explicit. – In the following, I will expand on concrete experiences in our emerging architecture programme at the University of Limerick and how we try to address this problem.

Design Studio as the place of reflective practice

The School of Architecture at the University of Limerick (SAUL) uses design studio in teaching architecture, both as a learning environment and a technique of instruction (*fig.1*). Work in the design studio models architectural practice. Its very capacity for reflection sets practice apart from vocational training and laborious enterprise. Without reflection there would be no innovation and no evolution of ideas. Much of what we do in studio-based design education relates, consciously or not, to the paradigm of reflective practice.



1. Design Studio — SAUL architecture students and lecturers in "conversation with the materials of a situation" (photograph by the author).

Donald Schön (1985, p.6) described the ideal design studio as *"...an exemplar of education for artistry and problem-setting. Architectural studios are prototypes of individual and collective learning-by-doing under the guidance and criticism of master practitioners."* At SAUL we think of every design project as an exercise in problem-setting rather than problem-solving. Thus it is only apt to do this through design studio, and we use it for inquisitive conversation where we simultaneously interrogate site, brief and strategy together with our students, modelling the *"conversation with the materials of a situation"* (Schön, 1983, p.78). In our work, problem-based learning is interwoven with continuous feedback and assessment. Design is best understood through reflective practice – in response to the condition of Modernity with its increasing uncertainty, ambiguity, complexity and potential value-conflict. Design education aims at empowering students to operate in these circumstances, and design studio is the main instrument in delivering such design education.

The problem of assessing creative work

But how does one evaluate results where an endeavour's outcome is, by its very nature and definition, open and uncertain? As we are often reminded, competencies that are key to design *"are simply not assessable by traditional methods. While it is perfectly possible to use traditional methods to measure recall of facts and information, it is not-at-all easy to use such methods to measure innovation, judgement, or personality"* (Race, 1993, Ten worries – and some suggestions, no. 3).

We aim to support self-directed learning and reflective practice. So, design studio has to establish a robust and reliable structure in terms of both teaching programme and assessment mechanism. Another problem in design education is, of course, how to evaluate quality. As Danish architect and educator Steen Eiler Rasmussen (1964, p.236) points out, “...the man has not yet been found who can pass judgment, logically substantiated, on a building’s architectural value. The only result of trying to judge architecture as you would a school paper – A for that building, B for that one, etc. – is to spoil the pleasure architecture gives. It is a risky business. It is quite impossible to set up absolute rules and criteria for evaluating architecture because every worthwhile building – like all works of art – has its own standards.”

Defining measurable criteria for assessment is seen to go against the nature of creative work. In my view, any creative endeavour, in its challenge of prevailing standards, borders on the obscene, and the quest to establish a measure for quality in design remains akin to the attempt to define what is pornographic – “I know it when I see it” (Jacobelli v. Ohio, 1964 – for a wider discussion of creative expression in conflict with established categories, see Marcuse, 1965). Often, this judgement is based on experience and exposure rather than on substantiated argument. The problem of complexity and ambiguity, of indeterminacy and value-conflict, and hence the necessity of judgement is inscribed into the very condition of Modernity. The futility of clear-cut distinctions is acknowledged even in the most categorical of sciences: distinctions made by naturalists are often arbitrary and for convenience’ sake, as Charles Darwin (1859, chapter 2) insisted, and one had to frequently call on “highly competent judges” where no accepted definition can be established. In the Uncertainty Principle of quantum physics Werner Heisenberg states that the observer affects the observed, and hence no fully neutral or objective result of observation or experiment can be obtained. And in mathematics Kurt Gödel has proven that any but the most trivial system of rules remains by necessity incomplete. Hence let us guard ourselves against a reductive and simplistic approach to an appreciation of learning. It is self-evident that a combination of aspects shapes our learning. It is the specific balance of these factors that captures the individuality of each learning experience. A failure to recognise and address the specifics of each field, discipline, subject and student diminishes the opportunity for positive learning. However, despite the futile attempt to define standards, quality in design can indeed be recognised and meaningful feedback is possible. Such should refer to qualitative descriptors where numeric marks and percentage grades (as often provided in university grading schemes) are of little help. For me, the challenge lies in identifying shared standards for creative work. I tried to address this issue when drafting the assessment criteria for design projects we use at SAUL today.

Assessment criteria for creative work

With the specifics of our discipline in mind, the *SAUL Marks and Standards* document explains in detail eight key criteria used in assessing student projects. Quality in the work submitted is more highly regarded than quantity, and valuable and/or continued contributions to the class as well as personal development and improvement through the design studio process are given extra credit. According to the *SAUL Marks and Standards* document, a design project is assessed in terms of research and concept, complexity, resolution and richness, response to references and critique, and presentation:

- Research addresses a proposition or self-established question in its entirety and draws relevant conclusions from a wide variety of facts established. Knowledge from supporting courses is applied to the design proposal.
- A strong concept applies order to a set of ideas granting consistency and a sense of hierarchy to them. It informs secondary decisions and allows for adaptation and change where necessary without betraying central ideas.
- The complexity of a design proposal is reflected in the response to the following aspects, but is not limited to them: site (location, orientation, access, terrain), programme (functionality, circulation, flexibility), and technology (construction, sustainability, structure).
- The proposal is considered rich if it deals with diverse aspects such as materials, colours, surface finishes, lighting (natural and artificial), scenarios of change, spatial themes, climate control, energy efficiency, expression of structure – in combinations and variations thereof.
- A design problem is well resolved when a special characteristic or multiple qualities are developed without infringing one quality out of conflict with another. Resolution is judged in relation to the complexity of the chosen problem or assignment.
- A firm and deep knowledge of reference buildings provides crucial input to every design project. At best, a variety of references are interpreted critically to inspire original and innovative work.
- The desired response to critique involves the extensive testing of numerous alternatives, even beyond suggested changes, and an informed decision on what to incorporate in the design proposal.
- A successful presentation not only delivers all the submission requirements but puts them forward as a consistent argument with all relevant information provided and evidence of investigation (research, references, sketches, process models) included in their appropriate place.

In our practice, these qualitative descriptors are reiterated and interpreted in dialogue with the students, and tested in reviews. In the process students develop a (self-)reflexive capacity for practical judgement. Of course, using a document of this kind is not

straightforward in everyday practice. Its criteria are subject to an on-going debate amongst students and lecturers, which in itself is an encouraging and empowering process. Students thus learn to relate to an array of reference points like waymarks grouped into intelligible constellations that help learners in triangulating their position – or, to employ a Joycean term, “almosting it” (Gordon, 2004) – and in navigating a course of their own. Other design educators put forward “persuasive arguments for promoting a localised, collective process of generating quality statements that might stimulate a new and much needed reflexive debate about how notions of quality are constructed, challenged and redefined” (Webster, 2010, p.65). And artists and writers like Virginia Woolf provide words of caution against overly zealous attempts to codify quality: “The success of the masterpiece seems to lie not so much in their freedom from faults – indeed we tolerate the grossest errors in them all – but in the immense persuasiveness of a mind which has completely mastered its perspective” (Woolf, 1943 as quoted in Frederick, 2007, p.78).

The role of feedback and assessment in design education

In education for critical judgement, and when it comes to supporting self-directed learning and reflective practice, feedback and assessment have proven the most effective tools. For design studio to work successfully, a robust and reliable structure needs to be established in terms of both teaching programme and assessment mechanism. Feedback in design studio is given in various ways: during individual desk tutorials and group reviews, class presentations and portfolio examinations, for instance. Assessment methods are diverse, varied and interlinked. However, in a ‘learning-by-doing’ scenario, do we assess student ‘learning’ or student ‘doing’? Instruction becomes more meaningful if students have already struggled with a similar problem themselves. Feedback works only after action, not after thought and, as experienced experts on assessment stress, “only the labouring student can bring forth learning” (Brown, 2011). With this in mind, student ‘doing’ that includes opportunities for experiment and revision (‘re-doing’) based on feedback and reflection transforms into ‘learning’. With this emphasis on the active parts of project work, feedback that guides development becomes most important. It is a mantra widely repeated at architecture schools that all design assessment is formative and hence all feedback impacts on the following step or the next project. Some learning effects and certain insights need time to fully take hold, yet assessment instruments integrated with the current project may only capture the immediate effects but not the long-term ones. It is interesting to note that “the impact of courses on student learning, and the role of assessment in them, can only be fully evaluated following graduation” (Boud, 2010, 6ii). Consequently, the challenge is to conceive of an assessment structure (rather than individual assessment instruments) that allows us to monitor student learning over time.



2. Establishing quality — Notes by SAUL architecture students working out criteria for ‘good design’ (photograph by the author).

Self-assessment as an engaging learning process and peer review are not yet widely used in SAUL. Requiring students to qualitatively evaluate their work amongst themselves, and to gauge the degree to which it corresponds to the stated learning outcomes would help in developing a (self-)reflective capacity in the students' practical judgement. Usually, the lecturer defines what is necessary and desirable, often in response to shortcomings observed in previous stages of an on-going project. Following a recommended approach, future iterations of self-assessment criteria can be developed in dialogue with the students, collecting their observations what makes a good project and asking them to prioritise – clustering or editing criteria only when necessary (Race, 1993). Drawing on recent experiences, I can confirm that self-assessment is an efficient way to improve the quality of the work submitted. Concluding from a structured class discussion in the spring semester of 2012, second-year students at SAUL consider a design to be good if it is *original* (authentic), *inventive* and *efficient* (appropriate) in its reaction to context (natural and artificial) and environment, spatial organisation (plan and section, circulation, private and public, flexibility etc.), and construction and use of materials (fig.2). To be successful, peer feedback needs to relate to a set of agreed criteria, and it is effective even without further input from the lecturer but only if a subsequent opportunity is provided to make adjustments in response. Peer feedback bears parallels to design reviews with its numerous critics: The best feedback is gleaned from multiple sources and by repetition – which admittedly makes the process rather labour-intensive and longwinded.

"How do you deal with students that are in danger of failing?"

– The question of how to deal with students in danger of failing had triggered a line of thoughts about quality in design, and how best to assess creative work. To summarise: Curiosity and creative thinking, openness and critical self-evaluation are behaviours we seek to model in the design studio and ultimately to develop in our students. Critical practice and reflective action rely on a continued conversation. The criteria of assessment will emerge as an integral part of that process. At SAUL we have established coherent qualitative criteria

by which to assess the students' creative work. Still, the scope for and potential of assessment by the students themselves is under-used. Self-assessment as well as peer review can relate to criteria already established or yet to be agreed in dialogue with the students. In the process, critical appreciation and multi-dimensional feedback may emerge as an alternative to assessment solely defined in terms of reliability and validity. However, authenticity, or in Carl Rogers' words, being "*dependably real*" remains indispensable – for both learner and educator. Pre-dating Schön's reflective practice paradigm, Rogers (1961, 1969) opens up a person-centred approach not only in psychology but to education as well, and in fact to all practice-based disciplines including architecture.

Today's challenge to architecture education is two-fold: It has to defend and protect its established ways of on-the-job training and research-by-design against recognised and successfully operating models of academic education and scholarly discourse. And it needs to adjust its own model to changes within the profession and to the shift of architecture's role in society and culture in general. Otherwise we risk negating architecture's relevance for good. These are the bigger questions we are facing: How to protect something that needs to change, and how to reform studio-based design education without damaging it? Because of its central role in education for reflective practice, feedback and assessment must be as much part of our pedagogical approach, of our design briefs as are building programme, spatial theme and chosen site. Yet, at present, our approach to design education in general and to assessment of creative work in particular is too often implicit and intuitive. Based on observations made in a dynamic and experimenting architecture programme, I offer these three suggestions: Establish the key qualities of successful design in an open and evolving debate. Make students partners in that debate and foster their ability for self-critical reflection. Conceive of ways to evaluate creative practice and student learning over time. If these can be met I have little doubt that architecture will retain the leading role it occupied in establishing reflective practice.

Ever tried. Ever failed. No matter. Try again. Fail again. Fail better.

Samuel Beckett *Worstward Ho* (1983)

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