

Perception of self and its' impact on verbal formative feedback in design student learning

Self
Communication
Culture
Feedback

What we say is often less telling than how we say...What we see is often more potent than what we are told...What we learn is often not a matter of fact, but a matter of being, a way of thinking. (Joyce. 1997)

Verbal communication - the exchange and debate between students, teachers and clients - is a key component of design education. How something is communicated to us and how we communicate to others can influence our outlook and attitudes and helps to mould the way we respond to situations and environments

Considerable scholarship exists on what comprises good teaching and learning but less on the role and impact of verbal dialogue and feedback can have on the quality of students' learning experience. This paper, drawing on my doctoral research and a UK Higher Education Academy funded project, offers a critical analysis of current undergraduate design students' learning through the face to face verbal formative feedback exchange between students and their tutors in a multi-cultural UK design educational environment. Using an internal evaluation strategy, through a series of observations, interviews, questionnaires and case studies, the research examines current practice and how verbal formative feedback is given, received and used in the undergraduate design studio.

This paper premises that how effectively students learn and the benefits gained from the formative feedback they receive, is not just reliant on the quality and focus of the feedback, but could also be affected by the students' perception of self - such as the power position (Devas, 2004, Sara & Parnell, 2004), the stress factor (Pope, 2005) and what Kluger and DeNisi (1996) refer to as the meta factor, where the quality of feedback interventions together with students' prior learning experience or understanding (Prosser & Trigwell, 1999) can impact on the student persona.

This perception of self can affect the cognitive resources applied to both the activities of the design 'presentation' and also the way students' understand and take forward the feedback that they receive. The learning, which results, is not always as might be expected, and is not just reliant on the nature and quality of the feedback given. This, the paper will argue, can impact on the quality of the design student's learning.

Introduction

Design education, as in all creative arts, is not an exact science and much of what is taught and what is learnt is interpretative. Within the design discipline, there is an ongoing, continual feedback debate which can be both objective and/or subjective.

Design itself is an activity which is both utilitarian and expressive ... the designed object is orientated both inward, towards the designer's personal choices, and outward, towards the requirements of, for example, the manufacturer or consumer. (Oak, 2000: 87)

In undergraduate design education, teachers or peers communicate their observations to the student, through the use of verbal and written feedback/ dialogue. Feedback can be received through a variety of forums, both formal and informal, the most common formal environment for this feedback being through the studio critique (crit)

The studio crit does not take on just one particular format and this name is used for a variety of activities. Crits can be tutor led with students presenting individually and feedback being given by the tutor/s and on some occasions the student group or invited external critics or in groups where students lead the dialogue and comment on other work in the group.

The development of a design concept/product involves the individual designer in much conceptualisation and inward-looking analysis, which may not always be obvious to those observing the product from outside. Understanding this conceptualisation is not always a necessary requirement for an outside audience in order to comprehend or appreciate the design. Within design education, the studio crit can allow the opportunity for a critical verbal analysis, a clarification and understanding of the creative idea or concept, together with an explanation of the thinking process the design student has gone through. This analysis and understanding is of benefit to both the designer and to their student peers and teachers, as it allows a clarification of thinking and understanding for all parties and a sharing of process.

Oak (1998), during her observation of a studio crit, concluded that the design activity, although it may not be seen as such when first considered, is a 'profoundly social' activity, where designers are often working in groups with other designers and also with technicians, clients and consumers. This scenario up to now has been traditionally replicated, as far as possible, in western design education - where students work in communal 'studio' spaces alongside their peers or in workshops shared often with students from other art and design disciplines, together with advice and assistance from their design teachers, technicians and visiting design consultants. Within design education, students spend the major proportion of their contact time with their peers and teachers in this studio / workshop environment. Much of the conversation that takes place in the studio is informal, with students discussing and exchanging ideas with each other, as well as through individual tutorials/desk crits and in small seminar/crit groups with their teachers. These sessions allow students the opportunity to ask questions for clarification or to seek their teacher's approval to develop and take an idea or concept forward to the next stage. This activity continues throughout the project and the development process.

Knowledge is viewed as a set of conditional interpretations, descriptions and models, subject to continual change and revision. Notions of 'objectivity' have tended to be replaced by ideas in which observer and observed, subject and object, are interdependent rather than discrete. (Danvers, 2003: 56)

Crits have a dual orientated pedagogic interaction: both being directed inwards towards the course requirements but also outwards, looking at the requirements of the 'real professional design world'.

Instructors assess a student's design work as an assignment and in terms of how successful it would be if it was a 'real' object or building out in the 'real world'...Teachers take on the role of the client and students act as 'hypothetical professional designers.' (Oak, 1998: 419)

Perception and interpretation of feedback

There are many factors that can come into play in this relationship and through the research it is my experience that the understanding of the process and what is taking place can often be perceived completely differently by the student and the teacher (Blair, 2006). This could be through an active encouragement of divergence of thinking, where a common understanding of what is expected is difficult to establish from the start of the module / assignment. In art and design there is never one prescriptive route with a specified goal at the end. Students are expected to challenge accepted dogmas

Learners are encouraged to progressively extend the arena of possibilities within which they operate, not to seek enduring solutions or answers but to open up unfamiliar territory and new ideas. (Danvers, 2003: 50).

These 'intuitive modes of learning and doing' (ibid) play a major role in the pedagogy of art and design.

But how does this affect the way students learn? There are many factors that can contribute to the quality of the students' learning experience. One factor to consider is the way that different students respond to feedback. A key finding in this research is how the perception of self, even for students who are being given good constructive feedback from peers and teachers, can still get in the way of the students' ability to receive and absorb this information. This can result in the quality of the learning experience being impaired. Purdie & Hattie's (1996) comparative study of Japanese and American students indicated that student response can be culturally determined, and that sometimes feedback may be seen as critical rather than constructive, or as an indicator of low ability and failure rather than development.

Students may also perceive seeking advice and help as an 'affirmation of low ability' (Blumenfeld, 1992).

It is the experience of the recipient of the feedback, which determines whether the gift is positive or negative. (Askew & Lodge, 2000: 7)

Crooks (2001) found that if the feedback does not relate to the learner's current understanding of the problem and the process they have undertaken, then it is difficult for them to relate to it and identify how they can effectively utilise and learn from this information and move forward. This might seem obvious, but in our enthusiasm to use formative feedback, these issues can sometimes be overlooked to the detriment of the learning experience.

Design does not fit neatly into the accepted 'this is where you need to be at the end of the tunnel' scenario. Art and design follows what Roos and Hamilton's (2005) call the 'cybernetic' viewpoint, where feedback is used, by the student, more as a continual self monitoring approach and an ongoing 'mediation' between the teacher and the student. Design pedagogy encourages individual thought and development and requires a large element of self-motivation and autonomy from the student, if they are to succeed in their profession.

What is important is the quality of feedback given and received in these critique sessions. If feedback is irregular, judgemental or not understood, students may lose direction or drift away from the objectives of the learning experience.

Negative feedback de-motivates (Askew & Lodge, 2000; Kent, 2005). A student receiving constructive feedback and being told that something is incorrect or has been misinterpreted is likely to have a completely different learning experience and achievement behaviour (Pintrich & Schunk, 2002: 62) to that of a student being given negative feedback in a non-constructive way. Kent (2005: 162) in her research into studio conversations states

Negative criticism hurts and often contains little useful information... Thoughtful, positive feedback can encourage the student and affirm processes that may be most inventive and potentially valued.

Where the quality of the feedback received from the teacher and the constructive nature in which their last crit had been conducted was in contrast to that of their previous crit experience, with a different teacher, students stated

If you'd asked me yesterday how I thought about crits, I would have said really bad, really awful, but after today, it's good. [nods of agreement from the rest of the group] (Blair, 2006: 70).

What is perceived as negative feedback can be more to do with the manner of delivery, how something is said and its relevance to the student's learning at that particular time, rather than what is said. (Black & Wiliam, 1998: 51)

There could also remain an issue, especially for students and also at times for teachers, in not being able to separate the formative from the summative aspect of feedback. This is because, as Higgins et al (2001:273) state

The feedback process is particularly problematic because of the particular nature of the power relationship. The tutor occupies the dual role of both assisting and passing judgement on the student.

Does this undermine the student's confidence or voice? Barrett (2006:259) questions this process.

Unsolicited advice is rarely appreciated in daily living, yet we generally believe that critiques give us license to identify problems in other people's work and then offer then our solutions to those problems, usually in a series of "shoulds".

This is backed up by my project research where a tutor reflecting on her experience of the crit, as a student said

The vast majority of crits did not comprise constructive critique that was well-argued - more often it was vague or self-absorbed: comments that I remember particularly well (not all aimed at me) include: 'I like it - don't change it', 'I don't like it - do it again', 'that's crap', 'I can't visualise it, so you probably shouldn't do it', 'Can you resolve it more - more or less?' 'There's something in there, but it's not what I thought'. - Comments that helped no one understand what was good or bad, or what needed to be learnt in order to improve..... I wonder what we learn from a tutor who provides only undefended opinions?

This, I would argue can problematise the idea of effective learning, as the teacher cannot fully control how feedback is perceived by the student. The verbal feedback the student receives could result in a poor learning experience.

Formative feedback in design cannot be prescriptive. There is no one right answer, or known final destination or conclusion to a given problem or project. Teachers and peer students give opinions based on tacit knowledge

Meaningful knowledge of assessment and standards is best communicated and understood through the use of a combination of both explicit and tacit processes (O'Donovan, Price & Rust. 2004:331)

but as there is no definitive or right solution, these opinions are, in the main, subjective. This can result in the student receiving conflicting and sometimes non-related feedback from a variety of individuals. Designers are expected to self-monitor and self-navigate their own pathway. This can result in the level of response shifting to a self / ego level in which the learners' energies go into reconciling the mark with their view of themselves as learners (Stobart, 2006).

But what is The role of the teacher in the learning process??

Unlike many subject areas, where recognition of formative assessment and feedback is a fairly new, or, until recently, an irregular component, formative assessment and feedback has been an integrated and established part of curriculum practice in art and design for over 50 years and is seen as a positive and critical element in the learning process.

How teachers perceive their role in this learning process can also impact on the students' learning experience. Stobart (ibid:136) states that teachers' views on learning and teaching can undermine or support formative assessment. The quality of the reflection on their practice related to the students' practice might impact on the learning experience.

Often, students on a design course find they are told by their teachers to 'chance their arm' and try things and see what happens, rather than being systematically guided along a more obvious prescriptive path.

In the arts diversity and variability are made central (Eisner, 2002: 197)

'Playing safe' is not an attribute aspired to in art and design education and assessment can often be interpreted as being subjective. This can present challenges for students in being

able to judge the effectiveness of the learning that takes place during and as a result of formative feedback sessions, such as at crits.

Project work, which forms the backbone of post-compulsory art and design education, is invariably heuristic, demanding a challenging synthesis of cognitive, creative and motivational abilities. (Dineen & Collins, 2005: 47)

The students' participation within the crit scenario can be variable, either through the set-up of the crit environment or the way the event is stage-managed by the teacher or the student's emotional investment in the crit.

Since the studio is somehow a distinct pedagogical method of higher education (Bennett, 1988), it is assumed to have a higher potential for being emotionally saturated. (Austerlits, N & Aravot, I. 2002: 87)

This emotive aspect is because the nature of studio design work involves

- Experimental learning and reflective processes
- Personal creative /design processes
- Exposure and self disclosure (Ibid : 87)

Percy's study into the studio crit found that

the pattern of behaviour served to put students in a subordinate position dependent on the critical direction and intervention of the academic member of staff. (2004: 149)

Percy goes on to state that

It would appear that a primary function of the crit lies not in the opportunity for students to demonstrate their learning, or debate with their peers and their staff, but rather to witness the virtuoso performance of their tutors (Ibid: 150).

Introduction to any dialogue should be constructed so that students are given the opportunity to test out their understanding of their concepts against those of other students and, of course, those of the teacher so a common understanding is reached. Issacs (1999: 19) in his powerful study into dialogue states that

The intention of dialogue is to reach new understanding and, in doing so, to form a totally new basis from which to think and act.

What is also evident is that the impact this feedback can have, can be negative as well as positive (Torrance & Pryor, 1998) and is not just reliant on the content of the feedback given, but that effective student learning is further reliant on a group of secondary factors, including the social interaction of students and teachers with each other (Percy, 2003), as well as the psychological and meta /self factor (Kluger & DeNisi, 1996). Awareness of these factors can be variable

Categories, which my research studies have found can have an impact on the student learning experience in the studio crit are:

- Evaluation - Peer/Self
- Clarification
- Trust/Tacit Knowledge
- Confidence
- Fear

As stated earlier in this paper, the crit is a fiercely defended form of studio learning and teaching; but although a large part of the process is an evaluation of the student work, there does not seem to be very much evidence of an evaluation of the process of the crit. Within

architecture, there is currently a debate and questioning of the validity of the process (Sara & Parnell, 2004). Brown (2004) and Cuff (1991) discussing architectural studio crits compare the crit activity to that of an 'initiation rite.' Ochsner (2000) talks of preparing students for the 'real world', and that survival of the crit 'ordeal' being seen as a 'rite of passage' and Dannels (2005) describe them as a tribal ritual.

Students in my study stated they wanted honest comment and did not want praise, which might shroud accurate feedback. One European student was critical of the 'Englishness' of the feedback given at UK crits to students.

They said 'oh it's great work and I thought no, that work is really rubbish and it is not good at all ...the British are really polite so instead of saying it's rubbish they try and say it in a really nice way. To me it is straightforward - if it's bad it's bad.'
(Blair, 2006: 76)

The comment above echoes Cameron & Pearce's (1994) study into formative assessment; which concluded that verbal praise and supportive feedback without substance has little effect on performance.

The relationship between self-confidence and the quality of the student's creative performance is critical to the quality of the learning experience of the individual student. Dineen and Collins (ibid) go on to argue that an under-confident individual is more likely to seek out more predictable, non-challenging and unimaginative solutions, through their anxieties about the task.

It's sort of a losing battle really to argue with your tutor, who knows better than you. (Blair, 2006: 77)

This last student's comment indicates a 'blind' acceptance of what the teacher has said without question or clarification. Oak (1998 p.417) sees this as posing 'an *interactional dilemma for the students*'. Do they, as this student implies say nothing and is this because they disagree with the comments but lack the confidence to say so, or is it because they whole-heartedly agree with the feedback? In this case it would seem to be the former.

You are never really sure of the opinion that they [the tutors] come up with.
(Blair, 2006: 77)

The above quote was from a level 3 student, so even after at least 3 and often 4 years first hand experience of the crit structure this indicates that the process can still remain unclear and unpredictable for the student. Is this because as learners, students have not yet developed the ability to cognitively analyse their work (Broomfield, 1995: 241) or is it because of a lack of consistency in or an understanding of the process and practice of the crit and a non development of *an appropriate body of tacit knowledge to be able to interpret formal statements* (Sadler. 1989: 135).

Fear was another factor which came up during my studies.

In my research female students voiced the most negative comments under the emotional aspects such as fear and humiliation. This is as would be expected as research shows *'females were more likely to report higher perceived stress levels overall than males'* (Pope, 2005: 59). Students in the first year of their course made the most comments regarding fear, but interestingly, by year two, the emphasis changed more towards the humiliation factor and became more about how they were seen within the group than fear of doing the presentation. This would seem to suggest that in 1st year students could be fearful because of the 'unknown' of the situation - a new course, new teachers, new peer group, unknown expectations. Once this became familiar in year 2, it was more about their standing in the group and their own self-esteem.

The comments students in the study made under the categories listed previously showed that female students made more comments under the clarification category, wanting to be clear about exactly where they were strong and what needed improving. Male students in their 1st year and final year made little comment about fear or humiliation, the only comments coming from year 2 male students. Could this be related to confidence at level 1 and not wanting to expose themselves as maybe still not knowing at level 3; or is this because, as Pope's research also states, that females tend to be more self critical of their own work (2005: 60)

The confidence category was the only category where male students voiced more concerns than female students about their anxieties. It is difficult without further exploration and involving a larger sample to explain the significance, if any, of this finding. If females were more self-critical then it would be expected that they would not seem to have confidence.

If students are learning in a supportive and what they perceive as a non-threatening environment, then motivational beliefs (Pintrich & Schunk, 2002) are likely to be higher and they are more likely to 'make sense of the tasks in hand' (Marton & Saljo, 1976) and learning is more likely to take place.

I would argue that the analysis in this study shows that the relationship and interpretation by the student of the self / meta categories - confidence, trust / tacit knowledge, clarification and evaluation - in the crit activities can impact on the quality of learning and the validity of the formative feedback

A shared understanding of what the crit is for and what the crit encompasses seems to be an issue, and can impact on the learning experience. The crit was seen, by all students I interviewed, as an opportunity to view their peers' work and somewhere to practice presentation skills in front of a large group. Interestingly, it was not perceived by any student as a particularly important 'learning environment'. The large crit inhibits the majority of students from giving feedback to their peers.

Another important finding indicated in this research is that just before and after students have received verbal feedback on their own work many 'switch off' and no longer hear or listen to what is being said about other student's work. **14**

I switch off to a certain extent. ...there is a pre-presentation period where you are so worried about your own presentation, you are not even thinking about anyone else's work or about things, which might be raised. (Blair, 2006: 89)

Because of the build-up and mental preparation for the 'presentation' in the minds of the students, together with the tiredness of preparation of work for a presentation to a deadline, students' concentration at the crit is often at a low and difficult for them to maintain for any period of time. Students also think that it is not just them but also teachers who get tired at the end of a long crit. This can have an affect on the quality of the feedback students receive. (Blair, 2006a)

If feedback is carried out in a positive manner, this can impact on how the student absorbs the feedback (Slade & Brunnsden, 2000) and hopefully will help to give them the confidence to first hear and understand, and then act on the feedback given. If feedback is not given in a positive way then

Negative affect leads to
Loss of control, which leads to
Fear of failure, which leads to
Poor performance (ibid: 353)

The learning benefits of a good crit should allow students to:

- reflect on their own learning in relation to their peers
- learn from their peers

- clarify ideas
- practice presentation skills
- develop their critical awareness
- receive feedback from their tutors and peers
- test ideas in a supportive environment without the pressures of the 'real world'

Teaching styles most conducive to the fulfilment of creative potential are those, which encourage student responsibility through ownership, trust and low levels of authoritarianism, providing individual attention and opportunities for independent learning. (Dineen & Collins, 2005: 46)

Design education is about verbal interaction. We need as a community to ensure that the dialogue is, as Issacs (1999: 19) describes

a conversation with a center, not sides .

References

- Austerlits, N. & Aravot, I. (2002). 'Emotions in the Design Studio'. In A. Davies (Ed.) *Enhancing Curricula: exploring effective curriculum practices in design and communication in Higher Education* – proceedings of 1st International conference. London: Centre for Learning and Teaching in Art & Design. (CLTAD)
- Barrett, T. (2006). *Criticizing Photographs - An Introduction to Understanding Images*. New York: McGraw Hill
- Black, P. William, D. (1998). 'Assessment and Classroom Learning'. *Assessment in Education* 5 (1), 7-72.
- Blair, B. (2006). : '*Perception, Interpretation, Impact - An examination of the learning value of formative feedback to students through the design studio critique.*' Institute of Education, London University. (EdD thesis)
- Blair, B. (2006a) "At the end of a huge crit in the summer, it was 'crap' - I'd worked really hard but all she said was 'fine' and I was gutted." *Art, Design & Communication in Higher Education*. 5. (2), pp. 83-95.
- Broomfield, S. D. (1995) *Becoming a critically reflective teacher*, San Francisco: Jossey-Bass
- Brown, R. (2004). 'The social environment of learning'. In A. Davies (Ed.) *Enhancing Curricula: towards the scholarship of teaching in art, design and communication in Higher Education*. Proceedings of 2nd International Conference. London: Centre for Learning and Teaching in Art and Design. (CLTAD).
- Cameron, J & Pearce, D.P. (1994). 'Reinforcement, reward, and intrinsic motivation: a meta-analysis', *Review of Educational Research*. 64, 363-423
- Cobb, J. (2000). 'Teaching and Learning practices commonly used in Art and Design Education'. In C Rust (Ed.) *Improving Student Learning 7. Improving Student Learning through Disciplines*. Oxford: Oxford Centre for Staff and Learning Development.
- Crooks, T. (2001). *The Validity of Formative Assessment*. British Educational Research Association, University of Leeds, Available at <http://www.leeds.ac.uk/educol/documents/00001862.htm>. Last accessed 6th January 2006
- Cuff, D. (1991). *Architecture - The Story of Practice*. Cambridge: The MIT Press

- Dannels, D. P. (2005). Performing Tribal Rituals: A Genre Analysis of "Crits" in Design Studio. *Communication Education*. 54 (2), 136-160
- Danvers, J. (2003). 'Towards a Radical Pedagogy: Provisional Notes on Learning and Teaching in Art and Design'. *Journal of Art and Design Education*. 22 (1), 47-51
- Devas, A. (2004). 'Reflection as confession: discipline and docility in / on the student body'. *Art, Design & Communication in Higher Education*. 3 (1), 33-46
- Dineen, R. & Collins, E. (2005). 'Killing the Goose: Conflicts between Pedagogy and Politics in the Delivery of a Creative Education'. *Journal of Art and Design Education*. 24 (1), 43-51
- Eisher, E. (2002). *The Arts and the Creation of Mind*. New Haven: Yale University Press
- Issacs, W. (1999). *Dialogue and the art of thinking together: a pioneering approach to communicating in business and in life*. New York: Doubleday.
- Joyce, R. (1997). 'Foreword: Architects Process Inspiration, Perspecta 2', New Haven: *The Yale Architectural Review*, MIT
- Kent, L. (2005). 'Studio Conversation: Approaches for a Postmodern Context'. *Journal of Art and Design Education*. 24 (2), 159-165
- Kluger, A. & DeNisi, A. (1996). 'The Effects of Feedback Interventions on Performance: A Historical Review, a Meta Analysis, and a Preliminary Feedback Intervention Theory'. *Psychological Bulletin*. 119 (2), 254-283
- Marton, F and Saljo, R. (1984). 'Approaches to learning'. In F.Marton, D Hounsell and N. Entwistle (Ed.) *The Experience of Learning*, Edinburgh: Scottish Academy Press.
- Oak, A. (1998). 'Assessment and understanding: An analysis of talk in the design studio critique'. In S. Wertheim, A. Bailey, M. Corston-Oliver (Ed.) *Engendering Communication - proceedings from the fifth Berkeley Women and Language Conference*, Berkeley California: University of California.
- Oak, A. (2000). 'It's a nice idea, but it's not actually real: Assessing the Objects and Activities of Design'. *Journal of Art and Design Education*. 19 (1) 86-95
- Ochsner, J K. (2000). 'Behind the Mask: a psychoanalytical perspective on interaction in the design studio'. *Journal of Architectural Education*. 53 (4), 194-206
- O'Donovan, B. Price, M. Rust, C. (2004). 'Know what I mean? Enhancing student understanding of assessment standards and criteria'. *Teaching in Higher Education*. 9 (3), 325-335
- Percy, C. (2004). 'critical absence versus critical engagement. problematics of the crit in design learning and teaching'. *Art, Design & Communication in Higher Education*. 2 (3), 143-154
- Pintrich, P. R. & Schunk, D. H. (2002). *Motivation in Education: theory, research, and applications*. Upper Saddle River, N.J.: Merrill/Prentice Hall.
- Pope, N. K. (2005). 'The impact of stress in self and peer assessment'. *Assessment and Evaluation in Higher Education*. 30 (1), 51-63
- Prosser, M & Trigwell, K (1998). *Understanding Learning and Teaching - The Experience in Higher Education*. Buckingham: The Society for Research in Higher Education and Open University Press.

Purdie, N. & Hattie, J. (1996). 'Cultural Differences in the Use of Strategies for Self-Regulated Learning'. *American Educational Research Journal*. 33 (4), 845-871

Roos, B. & Hamilton, D. (2005). 'Formative assessment: a cybernetic viewpoint'. *Assessment in Education*. 12 (1), 7-20

Sadler, D. R. (2005). 'Interpretations of criteria-based assessment and grading in higher education'. *Assessment & Evaluation in Higher Education*. 30 (2), 175-194

Sara, R. & Parnell, R. (2004). The Review Process, *CEBE Transactions*, Briefing Guide Series 1 (2), 56-69

Senturer, A. & Cihangir, I. (2000). 'Discourse as Representation of Design Thinking and Beyond: Considering the Tripod of Architecture media, Education and Practice'. *Journal of Art and Design Education*. 19 (1), 72-85

Sheffield University -School of Architecture. (2004) *Review of the Review*. Available at http://www.shef.ac.uk/architecture/main/activities/sr_revr.shtml. Last accessed 23 January 2006

Slade, C. and Brunsdon, V. (2000). Learning strategies in social science students as measured by the learning and study strategy inventory (LASSI). In Chris Rust (Ed.) *Improving Student Learning through the disciplines: Proceedings of the 1999 7th International Symposium on Improving Student Learning*. Oxford Centre for Staff learning and Development. Oxford. OCSLD Oxford Brooks University

Stobart, G. (2006). 'The Validity of Formative Assessment', In J. Gardner (Ed.) *Assessment and Learning*, London: Sage.

Till, J. (2004). 'The Lost Judgement.' EAAE Writings in Architectural Education Prize. Copenhagen. Available at www.openhouse-int.com/competi/JEREMY_TILL_PAPER.pdf. Last accessed 24th November 2005.

