



Redesigning the Design Crit

Christine McCarthy - Victoria University

June 2011



An Ako Aotearoa publication.

Support for this work was provided by Ako Aotearoa through its Regional Hub Project Funding scheme



This work is published under the [Creative Commons 3.0 New Zealand Attribution Non-commercial Share Alike Licence \(BY-NC-SA\)](https://creativecommons.org/licenses/by-nc-sa/3.0/). Under this licence you are free to copy, distribute, display and build upon this work non-commercially, as long as you credit the author/s and license your new creations under the identical terms.

Executive Summary

This report outlines the key findings of research in the area of the design crit in architectural and design education. Traditionally the design crit is a key part of design and architectural education which dates from the nineteenth-century Beaux Arts education system. It involves students publicly presenting their design projects in front of critics, usually from academia and design practice. The critics ask questions and provide feedback on the project to the student. The aim of the design crit is to provide ungraded oral formative or summative feedback, depending on when the crit occurs in relation to the design exercise, and to prepare the students for their careers as professional designers presenting their designs to clients. This research project sought to test the validity of new design crit types in the context of architectural and design education. This ambition is contextualised by research which has located pedagogical difficulties with the Traditional Crit form, which has been central to architectural and design education since the nineteenth-century.

These criticisms include:

- 1) student inability to learn from the feedback given due to the heightened atmosphere of the crit
 - 2) the privileging of professional acculturation over student learning
 - 3) power asymmetry between staff and student
- and 4) student anxiety

The key test of the crits was student feedback. Future research is needed regarding teaching staff feedback and objective measures of improved learning.

Data for the study was collected through focus groups of students who had only experienced the Traditional Crit, and groups of students who had experienced one or more of the experimental crit-types.

The focus groups were conducted using the question guide in Appendix A. Students participating in the trial design crits were drawn from second year Architecture, second year Interior Architecture, third year Architecture, third year Interior Architecture, and Fourth year Landscape Architecture. Classes were determined by the aim to get a range of discipline-specific students across year groups, and the ability for teaching staff to incorporate new teaching techniques into their courses. Focus Groups were conducted by a research assistant who was not involved in teaching the students.

Focus groups were transcribed allowing analysis identifying eight themes, namely:

- the condition of the student
- the quality of the time in the crit
- learning outcomes
- student engagement
- environmental aspects
- crit relevance
- crit function

Some of these themes (e.g. learning outcomes) were anticipated in the focus group questions, and reflect the focus of the research. These themes informed the development of an online survey questionnaire. The internet survey aimed: to take only a few minutes of students' time (i.e. 7 minutes maximum), be designed to enable relevant student groups to answer questions about more than one crit-type, and to both provide results which could be compared across crit-types when possible, and to reflect key differences between crit-types.

The internet survey was taken by a larger group of students. This group included first year students who were non-discipline specific but had all experienced the Traditional Crit.

The main finding of the study was to validate the use of these experimental crits as viable alternatives to the Traditional Crit.

The research produced the following key recommendations for good practice:

- 1) Introducing new crit types, via the interim crit, exposes students to new experiences of critique which are less intimidating for students.
- 2) Peer-feedback, evaluation and critique (as shown by the Speed Crit and the Judging Panel Crits) are valid ways for students to learn from a crit context. Students considered such learning experiences to be productive (especially in the Speed Crit).

3) New crit types are ways to emphasis specific aspects of learning. By introducing experimental crits (for example at the interim crit stage) students may learn targeted skills (e.g. critique in the Judging Panel crit, receiving criticism in the Speed Crit, understanding how their work is received and how to better communicate ideas in the Open Marking Session) which increase their confidence in Traditional Crits.

4) While the Traditional Crit is a point of anxiety, the focus groups indicated that it is still a highly valued learning tool, and, perhaps more importantly, a distinguishing factor of design education which students appreciate. Because it is valued, rather than simply replacing the Traditional Crit, supplementing it with other crit types may increase student skills and so reduce anxiety levels experienced in the Traditional Crit.

Contents

1.0 Introduction	5
2.0 Literature Review	7
3.0 Methodology	9
3.1 Design Crit Types	9
3.1.1 Performance Review Crit	9
3.1.2 Judging Panel Crit	9
3.1.3 Open Marking Session	9
3.1.4 Blogging Crit	10
3.1.5 Speed Crit	10
3.2 Focus Groups	10
3.3 Internet Survey	13
4.0 Results and Findings	14
4.1 Specific Survey Questions	14
4.2 Statistical Analysis	20
5.0 Discussion and Implications	21
5.1 Focus Groups	21
5.2 Internet Survey	23
5.3 Summary of Crit-Type findings	26
6.0 Conclusion:	
Further research and Key recommendations for good practice	27
7.0 Acknowledgements	28
8.0 References	28
9.0 Appendices	30
9.1 Appendix A: Focus Group Questions	30
9.2 Appendix B: Guide to Running Focus Groups	30
9.2 Appendix C: Internet Survey Questionnaire	31

1.0 Introduction

The design crit (or jury or review) is the prime mode of providing feedback to students on their design projects in architecture and design schools. It dates from nineteenth-century Beaux Arts architectural education, though it appears that it was not until the mid-twentieth century that the public form of critique, manifest in today's design crit, was formulated.¹ Typically the crit (whether it is an interim or a final crit) involves each student standing next to their work and presenting it to a group of critics in front of their peers and other interested parties. The critics (which may include both teachers known to the student and guest critics, usually from outside design practices) often form a physical barrier between the student who is presenting and their classmates. The wider group of students are often invited to participate but rarely do. The crit begins with the student presenting their work, and this is followed by critics asking questions about the work, and criticising the student's work. It is often unclear whether or not the crit influences the marking process. While this lack of clarity is the result of the different ways teachers use crits (i.e. the fact that some teachers mark work during a crit, while others mark work separately from a crit), the general impression in the student population is that their performance in a crit is directly related to summative assessment. The fact that the same form of crit is used in both interim (formative) and final (summative) moments of a design project adds to the conflation of student perceptions of their performance in the context of a crit and the assessment of their work.

There is significant cultural and traditional support for the current model of the design crit. This is underpinned by both traditional power-relationships (the critics being vested with power; while the student is placed in a vulnerable position), and the desire to provide students with opportunities to practice presenting work, as they might in front of prospective clients in architectural practice. In addition, the current model of the design crit is time-intensive and often attended by students who are inattentive due to the repetitive nature of presentations.

As is noted in section 2.0 "Literature Review" (pp. 8-9), research has found that many students find the experience of the crit intimidating. In the worst cases misunderstanding of criticism occurs due to: the ephemeral nature of conversation, the often sleep-deprived state of students, the stress of presenting in public in front of invited critics, and showmanship between critics (at the expense of students). Students often feel powerless, defensive and unable to understand criticism and feedback. Frequently students are exhausted from nights of lack of sleep and have difficulty concentrating. This is not the experience of all students. In the best cases a vigorous public debate about the state of the discipline occurs. Some students find the crit invigorating and enjoy its challenges, but it is fair to say that a significant number of students do not find the crit a productive learning experience.

Specific criticisms of the crit can be summarised as:

- 1) student inability to learn from the feedback given due to the heightened atmosphere of the crit
 - 2) the privileging of professional acculturation over student learning
 - 3) power asymmetry between staff and student
 - 4) student anxiety
- and 5) its time-intensive nature

This is the starting point for this research project, which aimed to go beyond simply adding to this established observation and to instead test new forms of the crit. These forms of the crit had been informally developed and tested, and received anecdotal feedback, but were in need of formal validation or testing to better understand their potential. The different crit types aimed to present a range of options including:

- 1) sharing the current power-base more equitably between the design critic/teacher and the student in the presentation of student work
 - 2) being more time- and staff-efficient
 - 3) providing a greater variety of meaningful feedback to students in the context of both formative and summative assessments
 - 4) better supporting means of discussing work across the student group and guest crits
 - 5) involving active-learning techniques
 - 6) supporting the ambition to have a design crit format which contributes to the preparation of students for work in architectural practice
- and 7) engaging students in the presentation of the work of their peers

¹ Anthony *Design Juries on Trial* 9-11.

Increasing student agency (e.g. by sharing the current power-base more equitably), and increasing opportunities for student engagement are key ways in which the new crits aim to reduce the high levels of anxiety many students experience. Equally engaging students in the presentation of the work of their peers, rather than their own work, removes the anxiety students feel because they often mistake criticism of their work for criticism of themselves. Active-learning was a key idea which underpinned this. In contrast to passive learning, active learning places students, rather than teachers, at the centre of learning. As Machemer and Crawford note: "Student-centered learning is characterized by active learning techniques that push students to be responsible participants in their own education and may include team-based (cooperative) learning," and should provide "opportunities for students to reflect, evaluate, analyze, synthesize, and communicate on or about the information presented."² There is an emphasis on students doing, including collaborations ("doing with others"), usually in groups of two to five students.³

Different crit types prioritised different aims.

The five crit types were:

- 1) The Performance Review
- 2) The Judging Panel Crit
- 3) The Blogging Crit
- 4) The Open Marking Session
- 5) The Speed Crit

For a description of these crits see section 3.1 "Design Crit Types" (p. 10). The correlation between crit type and the options discussed above are summarised in **Table 1**.

Table 1: Description of Crit Types in terms of aims

	Performance Review	Judging Panel Crit	Blogging Crit	Open Marking Session	Speed Crit
sharing the current power-base more equitably between the design critic/teacher and the student in the presentation of student work					
being more time- and staff-efficient					
providing a greater variety of meaningful feedback for students					
better supporting means of discussing work across the student group and guest crits					
involving active-learning techniques					
supporting the ambition to have a design crit format which contributes to the preparation of students for work in architectural practice					
engaging students in the presentation of the work of their peers					

The key test of the crits in this research was student feedback, which was gained through focus groups and an online survey. The research did not investigate the perception of teaching staff in relation to the crits, nor did it attempt any objective measures of improved learning (e.g. longitudinal mark comparisons).

Data for the study was collected through focus groups of students who had only experienced the Traditional Crit, and groups of students who had experienced one or more of the experimental crit-types. The focus groups were conducted using the question guide (Appendix A), and the Guide to Running Focus Groups (Appendix B). Students who participated were volunteers and the focus groups were conducted in accordance with VUW Human Ethics approval. Students participating in the trial design crits were drawn from second year Architecture, second year Interior Architecture, third year Architecture, and third year Interior Architecture. Staff in the landscape programme were cautious about including their students as they had recently been involved in teaching research and so fourth year Landscape Architecture were involved in a focus group regarding the Traditional Crit rather than experimental crits. Classes were selected by the aim to get a range of discipline-

² Machemer and Crawford "Student perceptions of active learning" p. 10.

³ Machemer and Crawford "Student perceptions of active learning" p. 11.

specific students across year groups, and the ability for teaching staff to incorporate new teaching techniques into their courses. Not all crits were tested in all disciplines and all years in order to prevent the over-testing of students. Focus Groups were conducted by a research assistant who was not involved in the teaching of the students.

Focus groups were transcribed allowing analysis identifying eight themes, namely:

- 1) the condition of the student
- 2) the quality of the time in the crit
- 3) learning outcomes
- 4) student engagement
- 5) environmental aspects
- 6) crit relevance
- 7) crit function

Some of these themes (e.g. learning outcomes) were anticipated in the focus group questions, and reflect the focus of the research. These themes informed the development of an online survey questionnaire. The design of internet survey questionnaire was given a number of constraints:

- 1) a length to complete the questionnaire of 6-10 minutes
- 2) the ability for relevant student groups to answer questions about more than one crit-type
- 3) the ability to compare results across crit-types
- 4) the ability to reflect key differences between crit-types.

The internet survey was taken by a larger group of students. This group included first year students who were non-discipline specific but had all experienced the Traditional Crit. Again the participation of these students was voluntary, and the internet survey was conducted in accordance with VUW Human Ethics approval.

The main finding of the study was to validate the use of these experimental crits as viable alternatives to the Traditional Crit.

2.0 Literature Review

It has long been realised that the design studio and its primary mode of public assessment, the design crit (also known as the crit, design review, studio crit, design-studio crit, or the studio jury) is "considered the backbone of all design degrees."⁴ It is promoted as:

an important opportunity for an assessment dialogue ... and for teachers to bring together and share, in a group environment, points of clarification or discussion, which may arise as areas of concern, weakness or strength during the development of the studio project. The crit allows the student an opportunity to practise and develop presentation skills and a verbal articulation of their thoughts to an audience.⁵

It has been described as both a "highly emotionally charged experience,"⁶ and "educationally flawed."⁷ These extremes are persistent from Kathryn Anthony's ground-breaking 1987 research through to more recent publications in the 2000s. Issues of power, lack of student comprehension of feedback, student anxiety, the prioritising of professional acculturation over learning and teaching and the crit's significance as a cultural ritual have been identified.

Design crits are a widely accepted teaching and examination technique in architectural and design education, even though as early as 1979 it was proposed that "there is very little literature which supports their use," and other research has found that the crit is "a poor vehicle for students to demonstrate their understanding of the context of their practice."⁸ Anthony's research has comprehensively documented the issues, and noted that 63% of the students she interviewed "do not think that they had learned much from the jury comments they had just heard."⁹ Students are typically exhausted (from weeks of all-nighters), and nervous. Dannels and Martin refer to "a climate of fear, defensiveness, anxiety, and stress ... associated with the feedback that occurs within critiques."¹⁰ Similarly Blair described "students [who], for the major part of their presentation, are literally frozen

⁴ Wallis & Greig "Foundation Knowledge?" 189.

⁵ Blair "At the end of a huge crit" 83.

⁶ Anthony "Private reactions" 7.

⁷ Chadwick & Crotch "Mutual respect" 145.

⁸ Ilozor "Balancing Jury Critique" 53, Peterson "Me and My Critics" 64, Percy "Critical absence" 143.

⁹ Anthony "Private reactions" 6.

¹⁰ Dannels & Martin "Critiquing Critiques" 136.

with fear. They do not hear or remember what they have said or what has been said about their work.¹¹ The evidence is clear that students who are exhausted,¹² anxious,¹³ and often academically disengaged,¹⁴ are not able to benefit from feedback.

The characteristic asymmetry in relative power between critic and student is identified as frequently counterproductive and prioritising professional acculturation over student learning.¹⁵ Issues of power and the design studio have been scrutinised by researchers such as: Argyris, Crysler, Dutton, Ilozor, Percy and Stevens, who have critiqued the operation of power and ideas of success in the crit, as uncritically embedded in architectural education. Dutton refers to the "maldistribution of power between student and professor,"¹⁶ echoed in Crysler's observation that "faculty have tremendous power over students."¹⁷ He states though that "What is in question is not the presence of an asymmetrical power relation, but its "abuse".¹⁸ Ilozor asserts that the:

jury process should be further democratized, whereby the jurors are not placed in positions of absolute dictatorial powers, while the students remain as powerless subjects. ... In an environment where instructors and jurors take monarch-subject postures, the students are less likely to be at ease, take risks, think and reflect critically, be imaginative and innovative, or communicate effectively.¹⁹

In addition Percy's research found that "the crit could become a site of contestation in the hegemonic display of power relationships *between* the academic members of staff."²⁰ She notes that "[i]t 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."²¹ Such exhibition of "crits-manship" locates the crit's role as an exhibition of the culture of the profession, its, as Stevens puts it, "embodied cultural capital,"²² or, in Argyris' words, the "mastery-mystery syndrome."²³ Crysler, referring to the 1992 Carleton report, notes that "architectural education is a process of professional indoctrination."²⁴ Stevens' work supports this notion, stating that "Architectural education is intended to inculcate a certain form of habitus and provide a form of generalized embodied cultural capital, a "cultivated" disposition,"²⁵ while Brown makes a direct connection between this broader cultural context and the specific initiation ritual of the crit: "Surviving this ordeal [the crit] is seen as a rite of passage, something to aspire to, even though no systematic evidence demonstrates that this atmosphere is necessary for the training of professionals."²⁶

The crit though is also venerated, and is recognized by staff and students as an important part of the culture of a design education; "a heightened moment of exchange between staff and students in the new landscape of learning ... a powerful vehicle for the induction and enculturation of students into the dominant mores and beliefs of a programme and its discipline."²⁷ It is one of the "most important ritual events in the life of any architectural school."²⁸

Despite several projects with aims to reform the crit, such negative issues are repeatedly raised, characterising the traditional design crit as intimidating,²⁹ hostile,³⁰ humiliating,³¹ boring³² and demoralizing.³³ Theoretical discussion regarding how to reconsider the crit include work by Crysler, Dutton and Webster. Crysler promotes Critical Pedagogy to encourage "students to voice their difference from normative values and histories to better understand the relations of power that construct their social subjectivity."³⁴ Dutton promotes Transformative Pedagogy in order to "attempt to balance the maldistribution of power between student and professor in order to

¹¹ Blair "At the end of a huge crit" 89.

¹² Anthony "Private reactions" 3, 7, 8-9; Blair "At the end of a huge crit" 90; Chadwick & Crotch "Mutual respect" 147; Frederiksen "Design juries" 23.

¹³ Anthony "Private reactions" 2, 3, 7, 9; Blair "At the end of a huge crit" 85; Frederiksen "Design juries" 23; Webster "A Foucauldian look at the design jury" pp. 12, 15.

¹⁴ Blair "At the end of a huge crit" 84; Frederiksen "Design juries" 25.

¹⁵ Blair "At the end of a huge crit" 85, 89; Chadwick & Crotch "Mutual respect" 147; Frederiksen "Design juries" 23.

¹⁶ Dutton "Design and studio pedagogy" 19.

¹⁷ Crysler "Critical Pedagogy" 209.

¹⁸ Crysler "Critical Pedagogy" 210.

¹⁹ Ilozor "Balancing Jury Critique" 59.

²⁰ Percy "Critical absence" 150.

²¹ Percy "Critical absence" 150.

²² Stevens "Struggle in the Studio" 112.

²³ Argyris "Teaching and Learning" 605.

²⁴ Crysler "Critical Pedagogy" 209.

²⁵ Stevens "Struggle in the Studio" 112.

²⁶ Brown cited, Blair "At the end of a huge crit" 92.

²⁷ Percy "Critical absence" 143.

²⁸ Webster "Power, freedom and resistance" p. 287.

²⁹ Anderton "Response to Frederickson" 28; Blair "At the end of a huge crit" 87, 88; Chadwick & Crotch "Mutual respect" 145, 148; Long "Yale crits" 25; Webster "A Foucauldian look at the design jury" p. 10.

³⁰ Anderton "Response to Frederickson" 28; Frederiksen "Design juries" 22, 24.

³¹ Anthony "Private Reactions" 7; Chadwick & Crotch "Mutual Respect" 145; Webster "A Foucauldian look at the design jury" p. 15.

³² Chadwick & Crotch "Mutual Respect" 147, 148; Frederiksen 25.

³³ Chadwick & Crotch "Mutual Respect" 145, 146.

³⁴ Crysler "Critical Pedagogy" 212.

democratize the studio" and suggests several strategies to define the power of architecture academics, including "structuring a context whereby students have to rely upon one another for guidance, support, and criticism."³⁵

This project is both informed by these broader issues and by more specific research examining the design crit. For example, Shannon, Roberts and Woodbury's development of vGallery used online methods to engage students to evaluate and debate student work.³⁶ More recently, Shannon has used and documented student feedback of a public presentation (Pecha Kucha, developed in Tokyo in 2003) as a model for design crits.³⁷ The project extends this thinking, drawing on other forms of evaluating culture and bringing them into the design crit context.

3.0 Methodology

The project used focus-groups and a questionnaire-based survey to evaluate learner's perceptions of six design crit techniques (which included the Traditional Crit). Separate applications to the Victoria University Human Ethics Committee were made for the focus groups (stage I) and for the internet survey (stage II). Students who took part in this research were all volunteers. They were recruited via presentations in classes, and emails to class groups.

3.1 Design Crit Types

The study trialled the different crit types in different design studio classes. These were:

- (i) the Performance Review Crit
- (ii) the Judging Panel Crit
- (iii) the Open Marking Session
- (iv) the Blogging Crit
- and (v) the Speed Crit

3.1.1 Performance Review Crit (one-on-one interaction, and marking)

In the Performance Review Crit, staff mark each student's work individually in front of the student. Marking sheets (with criteria) are distributed to the students prior to marking. Students are allocated 15 minute sessions, and the marking proceeds in the studio space, during a studio session, with visual connection but acoustic privacy (achieved by distance from other desks). Issues about how a student works may also be discussed but are not marked. Students are given the opportunity to ask questions about the marking.

3.1.2 Judging Panel Crit (peer-evaluation and design criticism of work)

In the Judging Panel Crit, students are put into groups of five or six in which students present their work one-by-one to other students, and the group allocates each project to a pre-determined category (e.g. Strongest Drawing, Best Planning, Best Response to Site - depending on what aspects staff would like focussed on), and to a student, who is not the project's author. After this stage, students re-group according to the categories, taking the project that they have been allocated to with them. In this second stage the students present the work that they have been allocated to the new group, and the group decides which project is the best in the category. Written feedback about each project is recorded and given to the project's author. Each group then presents the winners and explains why the group has made this decision. Staff are not involved in the discussions, and administer, rather than participate in, the crit.

3.1.3 Open Marking Session (fly-on-the-wall marking)

In the Open Marking Session, students place their unnamed work on a long table (possibly made from several tables joined together), and sit on either side, ensuring room for staff to move in the space between the table and the student seats. Staff then quickly organise the work in rough grade order from E to A+. Staff then begin at the fail end of the table and mark the work, discussing why the work should get a specific mark, and debating any disagreement, loudly enough for all students to hear. At about halfway through the marking there is a break for students (who have been watching in silence) to ask questions, or make comments, which might include if there are specific aspects of the brief they would like the markers to comment on when they are marking. A short coffee break follows, and then marking recommences. When all the work is verbally marked (there is no written record, and no work is named in the process of marking), the markers make general comments about the work.

³⁵ Dutton "Design and studio pedagogy" 19, 20.

³⁶ Shannan et al. "vGallery" 141-144.

³⁷ Shannon "Student Design Presentations" unpaginated

3.1.4 Blogging Crit (use of blogging software to enable students to comment on each others' work)

The Blogging Crit used the Blackboard student portal as a medium for students to crit other student's work, and for a second group of students to mark the student criticism using pre-set marking schedule/criteria.

3.1.5 Speed Crit (short student presentations, coupled with repetition to enable students to trial, and refine presentations)

In the Speed Crit, students are paired on either side of a long table (possibly made from several tables joined together), and have 30 seconds each to explain and get feedback on their project. After each student has presented their project they move seats into a new pairing and repeat. Staff are not involved in the discussions, and administer, rather than participate in, the crit.

The new design crit types had been identified from prior informal teaching experiments, and had received positive informal feedback from students, but required formal qualitative and quantitative feedback in order to validate the hypothesis that these new ways of conducting design crits would improve the value of design crits from the learner's perspective.

3.2 Focus Groups

The Focus Groups aimed to establish the range of student perceptions and experiences of each of the crit types. A Focus Group Interview Guide was prepared to provide the structure of the focus groups (**Appendix A**), and a Guide to Running Focus Groups was prepared (**Appendix B**).

A sample of student volunteers from each crit type were invited to focus groups which asked questions about:

- a) what students learnt
- b) how that crit type affected their understanding of their work, and the work of other students
- c) student perception of the time spent at the crit
- d) student perception of the reception of their work
- e) how the experimental crit compared with the Traditional Crit
- f) what the strengths and weaknesses of the crit discussed were

Students who agreed to participate in the focus groups were given information sheets about the research and signed consent forms, which had been approved by the VUW Ethics Human Committee. Focus Groups were recorded to enable transcription. Recordings of focus groups were transcribed and then destroyed.

The aim was to randomly allocate student volunteers to focus groups (by selecting every fourth student in a class list). To some extent the "purity" of random selection was compromised by logistical issues such as: the low number of student volunteers, and the desire to schedule focus groups as soon as possible following the experience of the crit (which was affected by outside demands on student time, such as assessment handins in other classes, and work commitments). Focus groups were run by a research assistant who was not involved in the teaching any of the classes, and focus group students from classes taught by the researcher were transcribed by a research assistant and their names anonymised.

The focus groups for each crit type were conducted as follows:

Crit Type	Design Discipline and Year
Traditional Crit	4th year landscape architecture (4 students) 2nd year architecture (4 students)
Blogging Crit	2nd year interior architecture (6 students)
Judging Panel Crit	2nd year interior architecture (5 students) 2nd year architecture (6 students)
Open Marking Session	2nd year interior architecture (5 students) 3rd year interior architecture (2 students) 3rd year architecture (2 students)
Performance Review Crit	2nd year interior architecture (4 students)
Speed Crit	3rd year architecture (4 students)

The results of the Focus Groups were promising with the exception of the Blogging Crit; feedback from which indicated the need for further basic design of the crit, rather than refinement. There were some positive aspects of the blogging crit, including:

- a) **the relaxed atmosphere** (e.g. "My first impression was, it was fun, better than standing up in front of everyone and feeling nervous and blabbing about nothing"),

b) insight into the marking process (e.g. "I thought it was good too – we kind of now totally understand how we're marked. Like, we saw the marking schedule – what the marker would go through to understand the work – and how easy it is to judge things on presentation as well"),

c) students engagement in design criticism (e.g. "It was kind of good, because it forced you to express your opinions and thoughts of a presentation"; "Your comments had to be quality because you were being marked on them as well – like to score points you had to get good reviews, so you had to do quality reviews as well.")

Other feedback indicated that there were significant flaws in the crit design, which suggested it would be more productive to address these valid issues in a later redesign of the crit type. The key issues raised included:

a) the mismatch of the format of work and the computer screen (e.g. "because they're on a blog – they're a certain quality, so you couldn't zoom in to – if you had really small text you couldn't – there wasn't a high quality document so couldn't read all their text and find out what their project was about. You sort of had to take it on face value – whether it looked pretty;" "I think the screen limitations really drew back on some of the work – just because you had to zoom in to see something, or zoom over, and couldn't get an idea of the whole thing at once.")

b) the framing of the crit into a game structure, causing an increasing lack of engagement (e.g. "I think the quality wasn't that good, and everyone had to rush it since it had a bit of a game atmosphere.; "When you first started it you were creative and constructive with your feedback, but then, as time went on the line between constructive and fun turned into a game, so it got more blurred – you became more interested in the game than you were in giving positive feedback;" "I think the game was probably a bad idea – it didn't benefit at all.")

c) the computer programme not allowing anonymous commentary ("It was hard though, because at the bottom of the thing it would say... the names, so you knew who was critiquing you – it was anonymous to an extent, but you still knew who was talking about your work.")

Because of this feedback a decision was made not to include the Blogging Crit in the internet survey.

Verbatim Transcripts of the Focus Groups were made, and key issues raised were used to develop an online survey.

Analysis protocol

The analysis of the focus groups was transcript-based, following Kruger & Casey.³⁸ The purpose of the focus groups was to identify groups of themes (**Table 2**), and to yield potential responses for question/s related to each theme in the design of the internet survey. This required the analysis of the focus groups to identify theme areas and the specific issues within each theme that would be likely student responses in the internet survey.

Themes were identified for each crit-type from the analysis of the focus group transcripts, leading to the following thematic framework and questionnaire structure. The following table lists the identified themes, and indicates which focus groups they emerged from. The first column aligns these to the final internet survey questions (**Appendix C**):

Table 2: Themes from Focus Groups (left margin indicates relevant survey question)

Qu	Focus Group Themes	Traditional Crit	Performance Review	Judging Panel	Open Marking Session	Speed Crit
2	Condition of Student					
	student anxiety/confidence	x	x		x	
	physical condition of student (e.g. tiredness)	x				
3	Productiveness of Time					
	length/quality of time	x	x		x	x
4	What was Learnt					
	learning outcomes	x	x	x	x	x
5	Student Engagement (represented by talking)					

³⁸ Krueger & Casey *Focus Groups* pp. 130, 137, 139-140.

	ability to talk about your work		x	x	x	x
	student engagement/involvement	x		x	x	x
	impact of staff/tutor involvement			x		
6a	Aspects of the Environment					
	in/formality/quality of the environment	x	x	x	x	x
6b	Relevance of Crit					
	disciplinary function/ritual/celebration	x				
	quality of feedback (staff and peer)	x	x		x	x
	relation to practice		x	x		
	transparency/opacity of marking	x	x	x	x	
	ability to see other students' work	x	x	x	x	x
7	Function of Crit					
	interim vs final review			x	x	

As an example, below are focus group responses (**Table 3**) related to what the students learnt, accommodated by the theme "Learning Outcomes." Some of these examples also relate to other themes, and the theme of assessment fed into another question about transparency/opacity of marking (Qu. 6) as the questionnaire was designed.

Table 3: Analysis of focus group responses related to the theme: Learning Outcomes

Example Student Responses: Learning Outcomes	Aspect of Learning
Traditional Crit	
"it's quite good to ... see a various amounts of ... people presenting and then learn learn from what they do"	communication
"probably the biggest thing that I've gotten out of crits is realising in second year that every presentation I did my reviewers were really confused because they couldn't read my boards and in that I've learnt alot about communicating the ideas"	presentation communication how work is received
"and to learn from people, like to X's boards and learn how she's done it"	presentation
"you learn things like there are some people who are really good at having one one really powerful, really clear drawing or a model and often in a crit that you know one thing will be focussed on, they'll talk about a plan, or a model and so it's good to see the people who can do that well."	presentation how work is received
"you see when other people's presentations go wrong ... and you can learn from that you know 'cause like if someone talks for too long and they don't realise that they've lost track or they jump from one side of their board to another or something"	communication
"it teaches you to care about our work a bit more"	
Performance Review	
"I think it's kind of good to see how they mark"	assessment
"it ... was good to see and learn that ... the way you thought it was going to be, [but] they interpreted it differently"	communication how work is received
"Knowing how subjective design is in itself, it's kind of good because you do see that there is that sort of banter between them to see"	how work is received
"I just felt like everything that they said to me about my design, um, and their thoughts, you know, I could take away things from it"	how to improve the design
"you can figure out what they want a little bit more, and where you need to work on"	general comment
Judging Panel	
"it definitely made us look more critically at the projects that we were given"	critting work
"it allowed you to understand how other people perceived your work"	communication how work is received
"you sort of can learn from, and realise how to improve it for next time I guess, as to what you're trying to communicate"	communication
"you learn more about the presentation of everyone else rather than their ideas of the project"	presentation
"it was kind of cool seeing how people were pushing the boundaries of,	design technique

like, what they could do digitally or through their imaginations, and just how they were being creative"	presentation
"it teaches you be very clear on what you want to communicate and what is detail work"	communication how to improve the design
"what I learnt from my work was what was ... missing"	how to improve the design
"it allowed us to see how a larger group reacts to your work"	how work is received
Open Marking Session	
"it kind of, showed you how the tutors marked it, and also whether the presentation was good or not"	assessment
"I did enjoy watching them and learning that I hadn't had this on this, or, so it still was good"	general comment
"But what I kind of learned is that it kind of depends more on the information, like, how you, how much you communicate your ideas, rather than whether it looks really amazing or anything – just more about communication. I found that kind of helpful."	communication
"it showed, like, really what 'they' actually do, and the arguments they do have"	assessment
"they can only see what you intended to say and if you don't really intend them to see anything, then they won't see it - yeah - so communication was a huge lesson"	communication how work is received
"what I learnt ... was ... communicating through different means"	communication presentation
Speed Crit	
"I realised what I was trying to do was coming across quite differently to other people and so that allowed me to actually go back and um rethink how I was doing it "	how work/presentation is received communication
"I also learnt ... to return to the original idea ... I had a picture of a model I did first and there was just nothing that had transferred over"	how to improve the design
"I learnt ... how individual design is and how that you can have your idea and you come up with it and someone can have a similar idea but come up with something completely different take a totally different process"	general comment
"I realised what I was trying to do was coming across quite differently to other people and so that allowed me to actually go back and rethink how I was doing it and I s'pose that was the thing that was openings to new interpretations and to know how someone else will interpret your work quite differently"	how work was received communication presentation

Other themes were similarly analysed to produce question answers, with the exception of student impression of how their work was received by staff because the focus groups revealed that the student perception of the reception of their work was uniformly positive across all the focus groups (e.g.: "I always feel like it's [work is] taken seriously"³⁹; "It shows that they actually care about your work – they're not just standing there going "ahh, we'll put that in a pile for that grade".⁴⁰). As a result, this aspect was removed from the material to feed into the internet survey questionnaire.

3.3 Internet Survey

The Internet Survey aimed to establish how representative the findings from the focus groups were across the group of students. The analysis of the focus groups transcripts (**Table 2**) were used to develop questions and question answers related to each theme (**Appendix A**). For example, the analysis of learning outcomes generated the following question answers:

- I learnt how to improve my design
- I learnt how to improve the presentation of my design (presentation)
- I learnt how others would understand my work
- I learnt how to critique design
- I learnt how to present my work during a design crit (communication)
- I didn't learn anything

The design of internet survey questionnaire was given a number of constraints:

³⁹ Second year interior architecture student

⁴⁰ Second year interior architecture student

- 1) a length to complete the questionnaire of 6-10 minutes⁴¹
 - 2) the ability for relevant student groups to answer questions about more than one crit-type
 - 3) the ability to compare results across crit-types
- and 4) the ability to reflect key differences between crit-types.

The questionnaire was organised into two sections. The first (one question) simply asked students to indicate which class they attended in order to convey information about which crit-types they had experienced. The second section was the core set of questions which were repeated for each crit-type (**Appendix C**). Students answered a maximum of three of these repeated sets of questions.

At the end of the teaching trimester, students from all of the classes involved which participated in the experimental crits were contacted via email and invited to complete the internet questionnaire (**Table 4**). In addition first year students, and fourth year landscape students (who had experienced only the Traditional Crit) were also invited to participate.

Table 4: Description of students participating in the internet survey

Year and Discipline of Student	number of participants	% (of survey subjects)	% (of class)
2nd year interior architecture students	20	11.9	47% (43)
3rd year interior architecture students	14	8.3	33% (43)
2nd year architecture students	38	22.6	32% (118)
3rd year architecture students	21	12.5	24% (88)
4th year landscape students	8	4.8	35% (23)
1st year interdisciplinary students	67	39.9	27% (261)
TOTAL	168*	100	29%** (576)

*This is the total number of students who answered the questionnaire, but only 146 students completed the questionnaire, indicating a 13% incompleteness rate.

** This is the participation rate (i.e. the percentage of students invited to participate who completed the questionnaire). The timing of the internet survey, after the final crits had been completed, may have negatively impacted on the participation rate, as this was the period of student holidays.

All students answered questions on the Traditional Crit, and different classes were asked questions only about the crits that they experienced. Questionnaire completions for each crit type are listed in **Table 5**.

Table 5: Number of students completing questions on crit-types

Crit Type	number	%
Traditional Crit	146	100
Performance Review Crit	27	18.5
Judging Panel Crit	44	30.1
Open Marking Session	34	23.3
Speed Crit	18	12.3

4.0 Results and Findings

The results from the internet survey indicated that the experimental crits performed as well or better than the Traditional Crit in terms of student engagement and crit productivity. As anticipated, the experimental crits isolated specific learning outcomes causing higher clusters of student responses around specific learning, rather than a broader and lower coverage achieved by the Traditional Crit.

4.1 Specific Survey Questions

Question 1.

The first question asked the students to indicate which class they belonged to and was used to designate questions appropriate to the crit-types that they experienced. The relative numbers of students from different disciplines and years, and the numbers of students who answered questions on the different crit-types are indicated in **Tables 4 and 5**.

⁴¹ The length of a questionnaire can impact on incompleteness rates. Lightspeed Research found that the lowest incompleteness rates occur for questionnaires of 6-10 minutes. Lightspeed Research "Questionnaire Length" p. 2; Dillman, Sinclair and Clark found that shorter questionnaires increased completion rates for questionnaires of five or more questions. Dillman, Don A., Michael D. Sinclair, & Jon R. Clark "Effects of questionnaire length" p. 302.

Question 2.

Question 2 asked subjects to indicate which one of six word sets best described how they felt in the crit. The word sets were:

- (a) interested, engaged, actively involved
- (b) nervous, frightened, intimidated
- (c) exhilarated, excited
- (d) bored, unengaged, disinterested
- (e) relaxed, at ease
- (f) tired, sleepy, exhausted

The responses to the question (**Figure 1**) indicated that a significant number of students (45%) experience anxiety (indicated by the selection of: "nervous, frightened, intimidated") in the Traditional Crit. The Opening Marking Session (38%), the Judging Panel Crit (41%) and the Speed Crit (78%) performed best regarding student engagement, indicated by the selection of "interested, engaged, actively involved."

Which of the following sets of words BEST describes how you felt during the X CRIT?

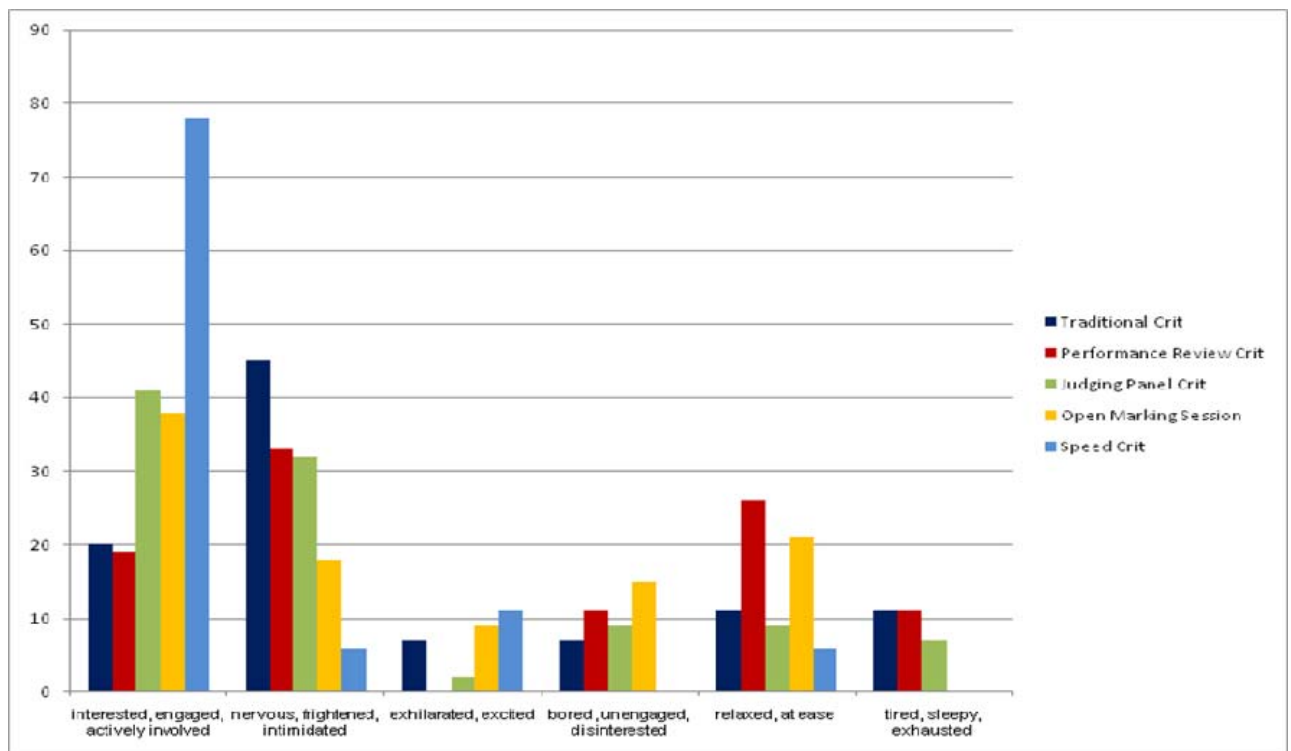


Figure 1: Responses to Question 2, which asked for the set of words which best described how the student felt during the crit. Different crit types are represented by different colours as per the key. Frequency (y-axis) is a percentage.

Question 3.

The third question asked participants to indicate whether the time spent in each crit was best described as "productive" or "unproductive." All of the crits were considered to be a productive use of time (**Figure 2**) by more than half the students, with the Speed Crit being considered productive by 94%, the Judging Panel Crit by 73%, and the Performance Review Crit by 67% of the students. The Traditional Crit (56%) and the Open Marking Session (57%) were closely comparable.

Overall, how would you describe the QUALITY of the TIME you spent in the X CRIT?

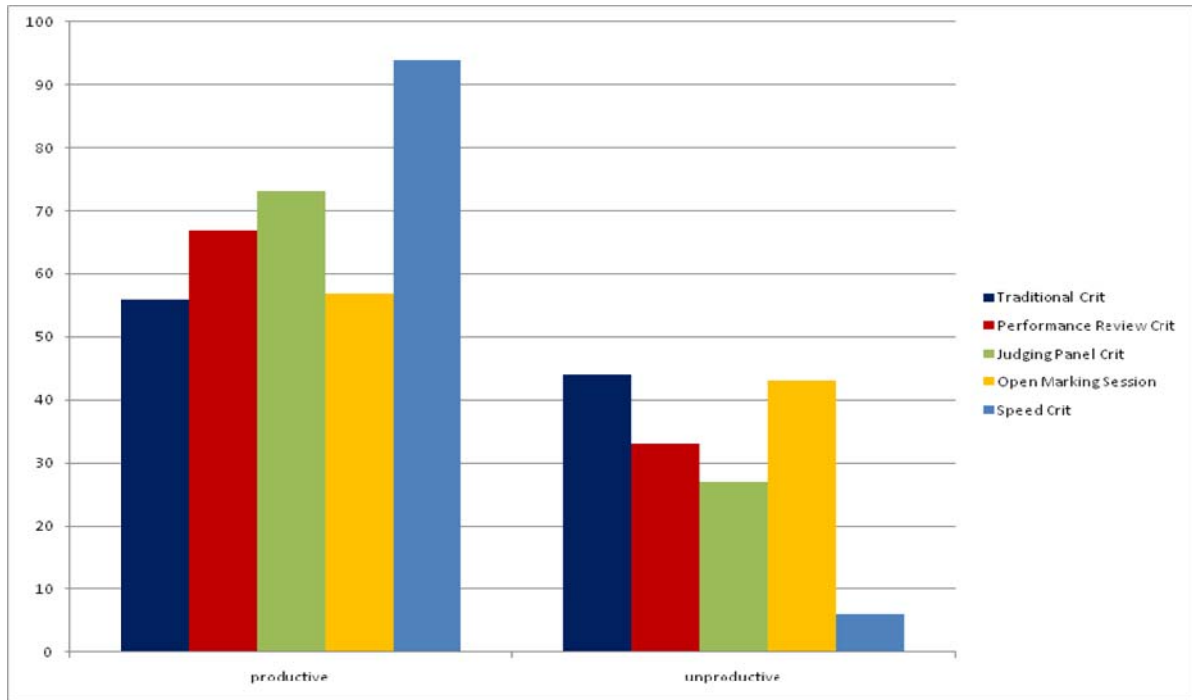


Figure 2: Response to Question 3, which asked students to select whether "productive" or "unproductive" best described their experience of the crit type. Different crit types are represented by different colours as per the key. Frequency (y-axis) is a percentage.

Question 4.

The fourth question asked students to describe what they had learnt from each crit-type by reordering the statements to indicate the degree to which students considered they had learnt different things. The statements which were ranked were:

- I learnt how to improve my design
- I learnt how to improve the presentation of my design
- I learnt how others would understand my work
- I learnt how to critique design
- I learnt how to present my work during a design crit
- I didn't learn anything

When indicating what they had learnt from the different crits, students' responses were diffuse for the Traditional Crit (hovering around the 20% line), and more focussed on specific aspects of design for the experimental crits (**Figures 3**). Because each aspect of learning was evaluated by ordering each aspect of learning (drag and drop), the results are relative rather than absolute. The Performance Review Crit performed the most strongly in the "I learnt how to improve my design" category, whereas the Judging Panel Crit, the Open Marking Session and the Speed Crit performed the most strongly in the "I learnt how others would understand my work" category. The Speed Crit was the only crit type for which no one selected the option "I didn't learnt anything" as a first choice.

Order the following statements to BEST describe what you learnt from the X CRIT. Drag and Drop the Statements to create the right order. (first choice)

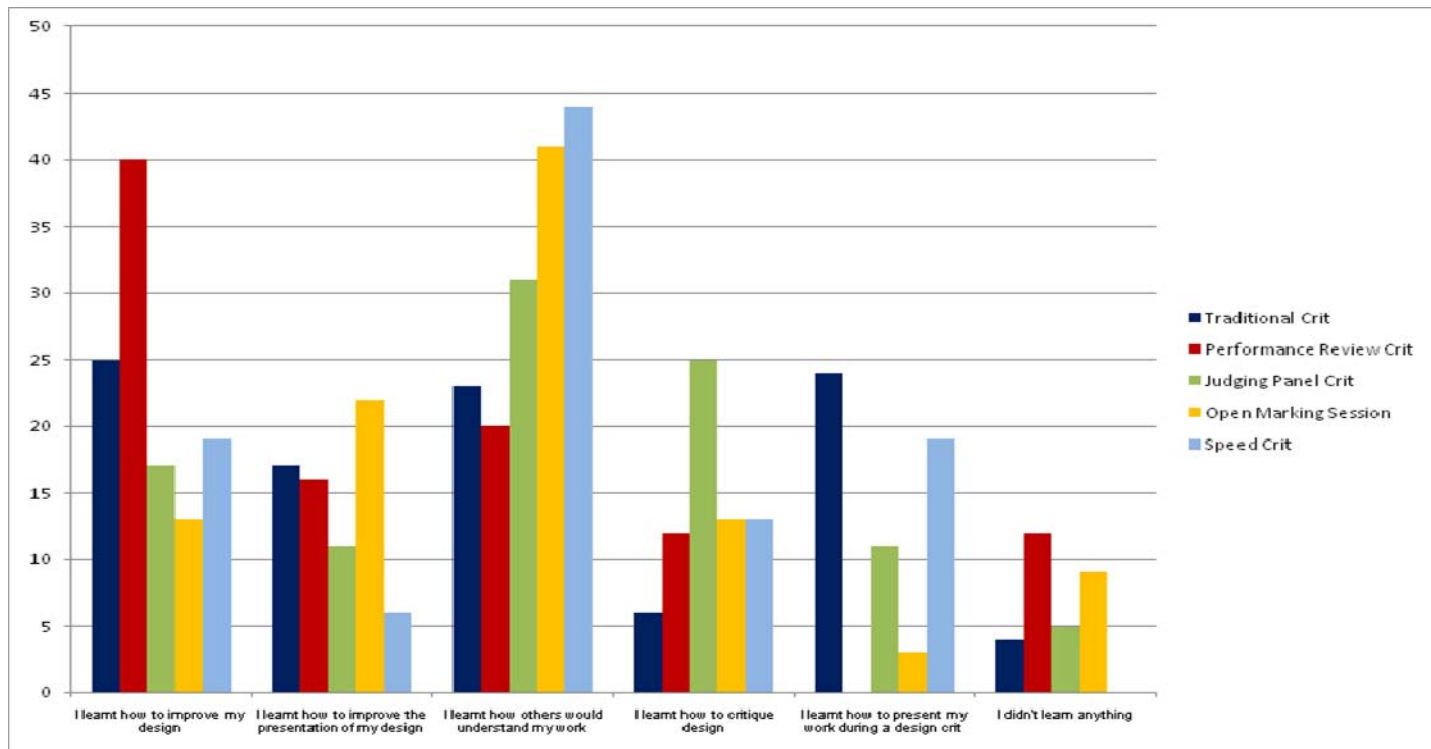


Figure 3: Response to Question 4, which asked students to rank groups of word which described what they learnt. The graph show students first choice in ranking. Different crit types are represented by different colours as per the key. Frequency (y-axis) is a percentage.

Question 5.

The fifth question asked students to select one statement regarding their desire to participate in the discussions about other students' work (**Figure 4**). Different crit contexts mean that some statements were only relevant to some crit-types (e.g. the Traditional Crit was the only situation where discussion took place in front of the whole class; the Judging Panel Crit was the only situation where the designer of the work wasn't present when discussion of the work took place). This question was only relevant to the Traditional Crit, the Judging Panel Crit and the Speed Crit, as the Performance Review was a one-on-one crit, and the Open Marking Session required students to observe in silence.

The set of statements from which students chose was:

- I enjoyed talking about other students' work
- I didn't want to comment on other students' work in case I was wrong
- I didn't want to comment on other students' work in front of the whole class⁴²
- It was easy to comment on other students' work because the designer of the project wasn't present⁴³
- It was easy to comment on other students' work because the teachers weren't involved⁴⁴
- I didn't comment on other students' work⁴⁵

A comparison between the Traditional Crit, the Judging Panel Crit and the Speed Crit, regarding student ability to comment on other students' work, demonstrated a strong relationship between enjoyment and talking about other students' work with the Speed Crit. The Judging Panel and Speed Crits performed strongest on the positive categories in this question, with the Traditional Crit being the only crit type to generate agreement with the "I didn't want to comment on other students' work in front of the whole class" category (35%), and the highest response to the "I didn't want to comment on other students' work in case I was wrong" category (14%).

⁴² Traditional Crit Only

⁴³ Judging Panel Only

⁴⁴ Judging Panel; Speed Crit

⁴⁵ Traditional, Judging Panel, Speed Crit

Which of the following BEST describes your ability to comment on other students' work in the X CRIT?

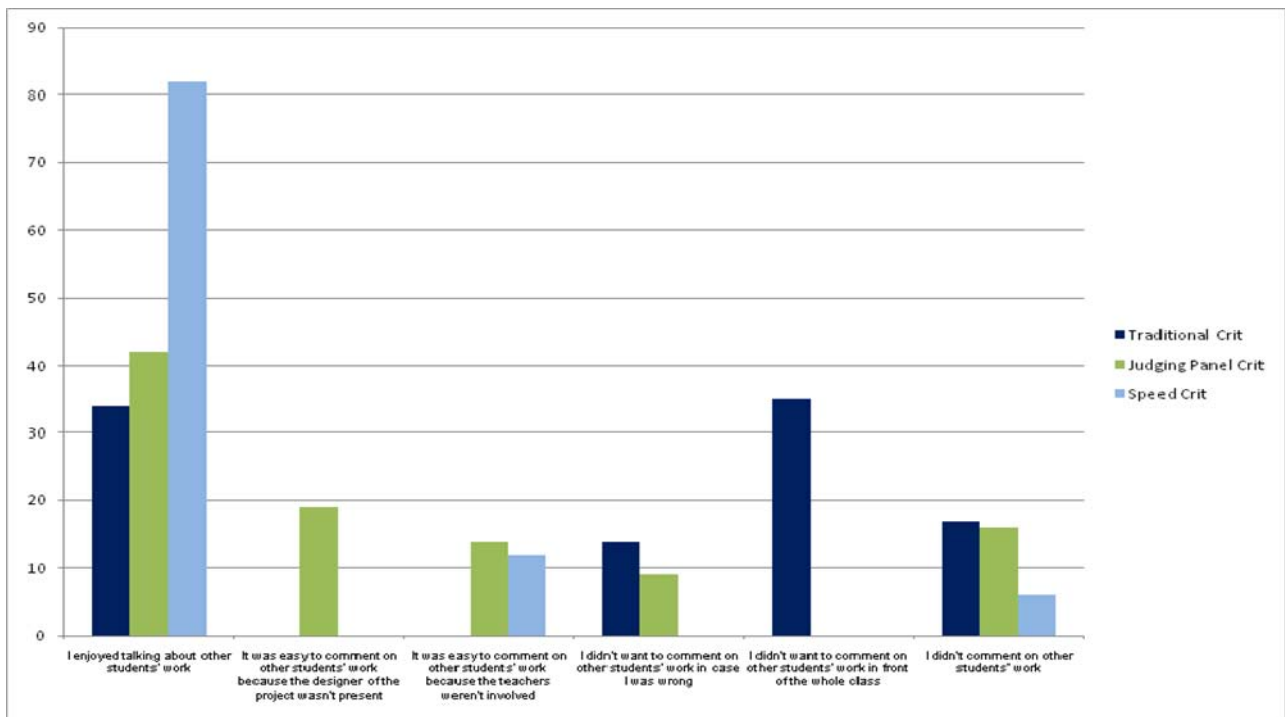


Figure 4: Response to Question 5, which asked students about their ability to comment on other students' work during the crit. Different crit types are represented by different colours as per the key. Because the Performance Review Crit was a one-on-one crit, and the Open Marking Session required that students be silent, these crit types were not included in this question. Frequency (y-axis) is a percentage.

Question 6.

The sixth question asked students to rate 6-9 statements (depending on crit-type see Appendix C) using a 5 point Likert scale ("Strongly Agree," "Agree Somewhat," "Neither Agree nor Disagree," "Disagree Somewhat," "Strongly Disagree").

The statements which were ranked were:

- It was an informal and relaxed atmosphere
- It was a formal and special event
- I received good feedback
- It had a concentrated one-on-one time/individualised focus
- It was good preparation for practice in the "real" world
- It was good to be seated and on the same level as the markers⁴⁶
- It was good to see the markers' conflicting ideas⁴⁷
- It was a good session to bring people together⁴⁸
- I gained insight into the marking process⁴⁹
- It made us look more critically at the projects⁵⁰
- It was good to see and learn from other students' work⁵¹

This group of general descriptions about crits indicated that all of the crit types were considered by more than 50 % of the students to give them good feedback ("Strongly Agree," "Agree Somewhat"), and the Performance Review (63%) and the Open Marking Session (80%) were considered by most students to give "insight into the marking process." The added values from "Agree Strongly" and "Agree Somewhat" appear in **Figures 5a-b**.

⁴⁶ Performance Review Only

⁴⁷ Performance Review; Open Marking Session Only

⁴⁸ Open Marking Session Only

⁴⁹ Traditional; Performance Review; Judging Panel; Open Marking Session Only

⁵⁰ Judging Panel Only

⁵¹ Traditional; Judging Panel; Open Marking Session; Speed Crit Only

Indicate the degree to which you agree or disagree with the following statements about the X CRIT. (Strongly Agree & Agree Somewhat)

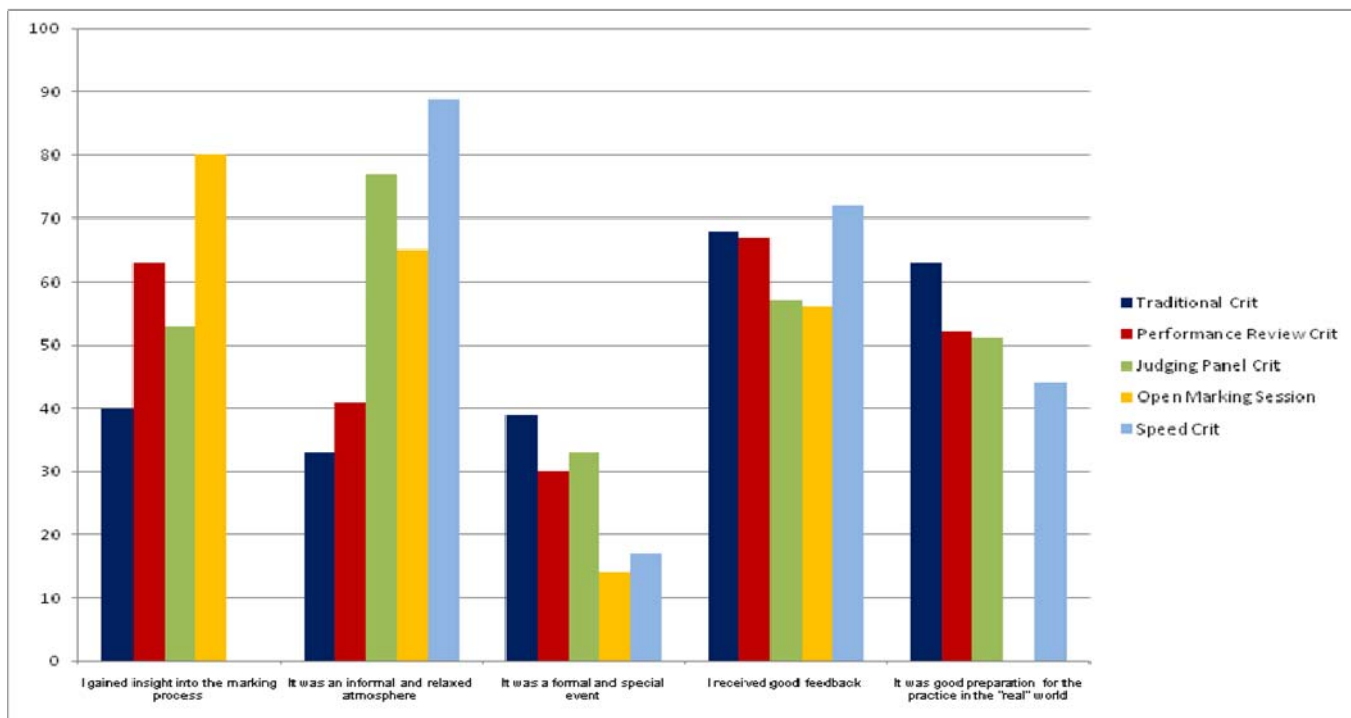


Figure 5a: Response to Question 6, which presented a number of statements about crits to the students and asked students to indicate the degree to which they agreed or disagreed with the statements (5 point Likert Scale: "Strongly Agree," "Agree Somewhat," "Neither Agree nor Disagree," "Disagree Somewhat," "Strongly Disagree."). "Strongly Agree" and "Agree Somewhat" results have been added together for this graph. Different crit types are represented by different colours as per the key. Not all statements were relevant to all crit types (e.g. the Speed Crit did not provide opportunity to understand the marking process), and this is reflected in absences. Frequency (y-axis) is a percentage.

With the exception of the response to "It was good to see and learn from other students' work" in **Figure 5b**, other statements were less applicable to the majority of crit-types. Of note was the strong indication that the Judging Panel Crit encouraged the student to "look more critically at the projects," and perception, in the Performance Review and the Open Marking Session, that staff having different and conflicting ideas was a positive thing.

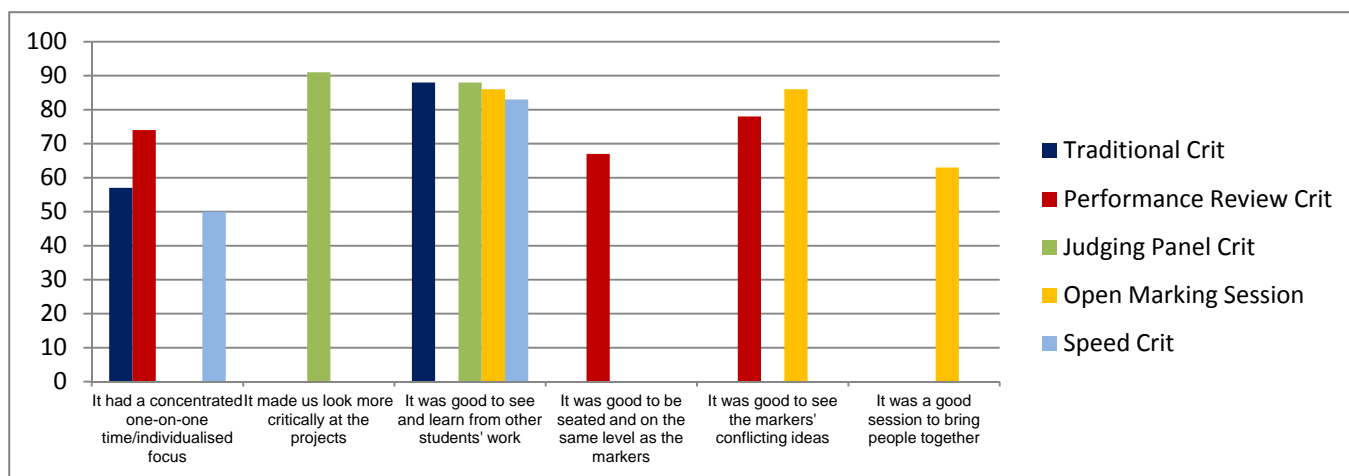


Figure 5b: Response to Question 6, which presented a number of statements about crits to the students and asked students to indicate the degree to which they agreed or disagreed with the statements (5 point Likert Scale: "Strongly Agree," "Agree Somewhat," "Neither Agree nor Disagree," "Disagree Somewhat," "Strongly Disagree."). "Strongly Agree" and "Agree Somewhat" results have been added together for this graph. Different crit types are represented by different colours as per the key. Not all statements were relevant to all crit types (e.g. the Speed Crit did not provide opportunity to understand the marking process), and this is reflected in absences. Frequency (y-axis) is a percentage.

A final question asked students to designate a function (i.e. interim, final, or both interim and final) to each crit.

No design crit stood out as favoured as a final crit, but the Traditional Crit gained the highest percentage of support (32%) as a final crit.

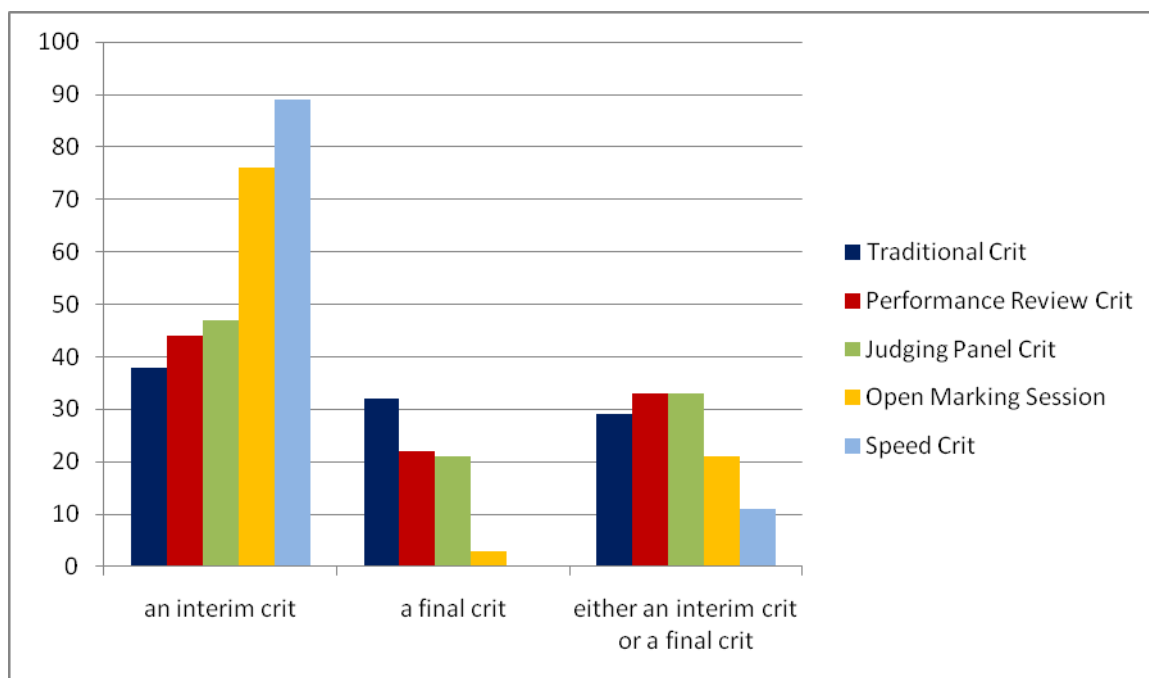


Figure 6: Response to Question 7, which asked students to designate a function to each of the crit types. Frequency (y-axis) is a percentage.

4.2 Statistical Analysis

The results were analysed to test whether there was a significant difference between the way students answered questions within crit types and across crit types.

Within Crit Types.

Testing results from questions 2 (how students felt) and 4 (what students learnt) found no significant differences for the Traditional Crit, the Performance Review, the Open Marking Session and the Speed Crit. A significant difference was found for the Judging Panel Crit (Chi-square: $\chi^2(25, N=36)=49.55, p<.01$) but there were insufficient responses to confirm what the difference was. It appears that people who felt "interested, engaged, actively involved" were more likely to think that they "learnt how to improve the presentation of their design" than people who felt "nervous, frightened, intimidated."

Testing results from questions 2 (how students felt) and 6 (agreement/disagreement with various statements) found no significant differences for the Speed Crit. Significant differences were found as follows:

	Traditional Crit	Performance Review	Judging Panel Crit	Open Marking Session
"I gained insight into the marking process"	$F(5,139)=3.25, p<.05$ People who felt "exhilarated, excited" were more likely to agree with this statement ($M=1.89, SD=0.78$) than those who felt "tired, sleepy, exhausted" ($M=3.38, SD=1.03$) or "nervous, frightened, intimidated" ($M=3.07, SD=1.13$)	$F(4,22)=3.28, p<.05$ People who felt "tired, sleepy, exhausted" ($M=4.33, SD=0.58$) were less likely to agree with this statement than those who felt "interested, engaged, actively involved" ($M=2.00, SD=0.71$) or "nervous, frightened, intimidated" ($M=2.22, SD=1.20$) or "relaxed, at ease" ($M=2.00, SD=1.16$)		
"It was an informal and relaxed atmosphere"	$F(5,139)=5.34, p<.01$ People who felt "interested, engaged, actively involved" ($M=2.48, SD=0.94$) or "relaxed, at ease" ($M=2.67, SD=0.72$) were more likely to agree with this statement than those who felt "nervous, frightened, intimidated"			$F(4,29)=2.81, p<.05$ People who felt "interested, engaged, actively involved" ($M=1.77, SD=0.73$) were more likely to agree with this statement than people who felt "nervous, frightened, intimidated" ($M=3.33, SD=0.82$)

	($M=3.61, SD=1.17$)			
"I received good feedback"	$F(5,139)=2.41, p<.05$ People who felt "interested, engaged, actively involved" ($M=1.78, SD=0.75$) were more likely to agree with this statement than those who felt "nervous, frightened, intimidated" ($M=2.45, SD=0.99$)			$F(4,28)=5.14, p<.01$ People who felt "interested, engaged, actively involved" ($M=1.85, SD=0.90$) or "relaxed, at ease" ($M=2.33, SD=1.03$) were more likely to agree with this statement than those who felt "bored, unengaged, disinterested" ($M=4.00, SD=1.23$)
"It was good to see and learn from other students"	$F(5,138)=2.54, p<.05$ People who felt "interested, engaged, actively involved" ($M=1.26, SD=0.66$) were more likely to agree with this statement than those who felt "nervous, frightened, intimidated" ($M=1.79, SD=0.77$) or "bored, unengaged, disinterested" ($M=2.09, SD=1.14$)			
"It was a formal and special event"			$F(4,37)=3.97 p<.01$ People who felt "nervous, frightened, intimidated" ($M=2.64, SD=0.75$) were more likely to agree with this statement than those who felt "relaxed, at ease" ($M=4.25, SD=0.50$)	$F(4,29)=3.40 p<.05$ People who felt "interested, engaged, actively involved" ($M=2.92, SD=1.04$) were more likely to agree with this statement than those who felt "bored, unengaged, disinterested" ($M=4.40, SD=0.55$)

Across Crit Types.

All questions were tested across the different crit types in comparison with the Traditional Crit.

Significant Differences were found as follows:

	Traditional Crit
Performance Review	Paired Sample t-tests (N=25) "It had a concentrated one-on-one time/individualised focus", $t(24)= 3.12, p<0.01$. Respondents agreed with this statement more for the Performance Review crit ($M=1.96, SD=1.08$) than they did for the Traditional crit ($M=2.79, SD=1.22$).
Open Marking Session	Paired Sample t-tests (N=31). "I gained insight into the marking process", $t(30)= 3.59, p<0.01$. Respondents agreed with this statement more for the Open Marking Session ($M=2.03, SD=1.19$) than they did for the Traditional crit ($M=3.10, SD=1.17$). "It was an informal and relaxed atmosphere", $t(30)= 4.00, p<0.01$. Respondents agreed with this statement more for the Open Marking Session ($M=2.19, SD=1.14$) than they did for the Traditional crit ($M=3.42, SD=1.15$). "It was a formal and special event", $t(30)= -3.21, p<0.01$. Respondents agreed with this statement more for the Traditional crit ($M=2.58, SD=1.06$) than they did for the Open Marking crit ($M=3.39, SD=1.05$). "The (....) crit is best used as....", $t(30)= 4.63, p<0.01$. Respondents thought the Open Marking Session ($M=1.30, SD=0.68$) was better as an interim crit and the Traditional crit ($M=2.13, SD=0.70$) as a final crit.
Judging Panel	Paired Sample t-tests (N=40). No significant differences
Speed Crit	Paired Sample t-tests (N=18). Students were more likely to feel "interested, engaged, actively involved" in the Speed crit than they were in the Traditional crit. "Overall, how would you describe the QUALITY of the TIME you spent in the CRIT?", $t(16)= 3.77, p<0.01$. Respondents thought the Speed crit ($M=1.06, SD=0.24$) was more productive than the Traditional crit ($M=1.51, SD=0.51$). "It was an informal and relaxed atmosphere", $t(17)= 5.81, p<0.01$. Respondents agreed with this statement more for the Speed crit ($M=1.72, SD=0.67$) than they did for the Traditional crit ($M=3.56, SD=1.10$). "The (....) crit is best used as....", $t(17)=0.72, p<0.01$. Respondents thought the Speed crit ($M=1.22, SD=0.15$) was more suitable as an interim crit than they did for the Traditional crit ($M=1.94, SD=0.15$).

5.0 Discussion and Implications

5.1 Focus Groups

The Focus Groups confirmed previous research regarding the Traditional Crit. Negative aspects of the crit of student nervousness, tiredness and the dependence on the ability to present in front of the class rather than design was noted. Simultaneously students reported the importance of the crit as a distinct disciplinary ritual, which set architecture and design disciplines apart from other students' university experiences. Students also

described the power of the anticipation of the Traditional Crit as a motivator to get work done, and as an exciting finish to a project. These results both reinforced previous research and indicated additional aspects of the student learning experience (both positive and negative) in the traditional design crit.

Like the Traditional Crit, the experimental crits generated positive and negative comments from the students. The aim of the focus groups was to find out the likely range of answers and in order to design an internet survey that enabled students to express positive or negative responses to aspects of the crit. In addition, the Focus Group responses revealed other (sometimes contradictory) values held about crits. Feedback from a "qualified" person appeared to be valued. The Judging Panel Crit was criticised by some students for not being serious enough, even though at no time did students (in response to the Focus Group question: "Did you feel you/your work were/was taken seriously?") consider that their work was not taken seriously in response to any of the crit types (e.g. "I think that's common throughout the school ... when it comes to your actual presentation ... your work is always taken seriously"⁵²). The comments from second year interior architecture students, contrasting peer feedback with staff feedback (in response to the Blogging crit), revealed a desire in the students for "harsh" criticism:

Student 1: "tutors are so much harsher. Which is good..."

Student 2: "Yeah, that's what you want..."

Student 1: "...because it forces you to adapt and move forward ... Your tutor will give you feedback then and there, and she only has a certain amount of time, so she'll rip it apart – which is good 'cos then it gives you a shock and the next time you're like "ok – so next time I'll..." whereas this one was just brief and relaxed."

Student 3: "Yeah, if crits were always that relaxed I don't think that..."

Student 1: "Push myself..."

Student 4: "People wouldn't step their game up."

Student 3: "Yeah – you wouldn't try. That sounds bad, but well, 'cos you lead up for that absolutely embarrassing moment when you have that debate and they're like "This is stupid, what have you done?" - that's why you push yourself so hard. But when you just get your friends saying "Oh, it looks cool" whatever, I don't know, it's just - I look forward to crits, I like it – I like the challenge that the tutors offer us."

The Performance Review appeared to offer both a level of formality and intimacy. The anticipation of the review was intimidating, but the experience of the crit was not ("everyone was stressing out before it, because you're just like "Oh my god – it's soo intense – you're getting your grade right then and there," and then when you're in there, you're kind of like "oh, it's not as bad"⁵³).

Unlike the feedback from the Blogging Crit, the feedback from the Speed Crit indicated that peer feedback was valued, because of the quality and the variety of viewpoints, as these comments from third year architecture students suggest:

"when you're seeing the tutor you're seeing the same person each time and I s'pose just having that different perspective from different people ... if they connected with what you were doing and giving feedback and then the quality was good."

"it's not a critique itself it's more "Look at this" and "Have you looked at that?" you're actually looking at ways in which you can help in the design develop, whereas the formal crits ... it tends to be "What is this? Where is that?" [it] seems to be on a slightly different level."

Students also valued seeing other students' work. This was apparent in the consideration of the Performance Review where students saw the staff/markers/critics separately ("everyone had their separate crits so no one knew what anyone else was doing"⁵⁴). An important aspect of seeing other students' work was helping students understand how their work compared ("It is good though to hear what other groups have done well and why they're doing it well, and comparing it to your own work and seeing and then comparing it to your own work and seeing that"⁵⁵).

Students also valued seeing staff discuss the work in the context of the Performance Review, and the Open Marking Session, both of which involved staff deliberating over students' marks ("they both had their ideas, and

⁵² Second year interior architecture student.

⁵³ Second year interior architecture student

⁵⁴ Second year interior student

⁵⁵ Second year interior architecture student

they both spoke with their feelings about it, and, you know, then they sort of came to an agreement,"⁵⁶ " it would be really good to have this type of open marking session crit because it gives you an insight into how the markers' think, how do they evaluate the work,"⁵⁷ "as they talked you could hear where they misunderstood something and you'd know that's not clear and I need to work on it"⁵⁸).

An unexpected response from the Speed Crit Focus Groups, was the consciousness, among the students, of social hierarchy within their class cohort and an appreciation of how the Speed Crit challenged this hierarchy ("no matter what kinda group you're in I think there is a social hierarchy and I think this broke it down,"⁵⁹ "I also liked it because it forced people to talk to each other because sometimes in a crit you're not with your friends so you don't always talk to everyone in your tutor group"⁶⁰). In a similar way the Judging Panel Crit encouraged fellow students to talk ("I think it worked alot better than the previous way of critting 'cause everyone was involved in it,"⁶¹ " these ... quiet people, normally, that I was with that ended up being really verbal and ... it was like "Wow," "Great" they've got into it and so that was fantastic"⁶²).

5.2 Internet Survey.

Ultimately, the key aim of this research was to ascertain whether these crit-types are valid in comparison to the Traditional Crit in terms of student-perception of learning via an evidence-based review of current and potential teaching practices. More research is required regarding whether the alternative crits positively contribute to improving student learning, and to understand staff perceptions of their value.

This discussion of the results will focus on whether the experimental crits can be considered to be equal to or better than the Traditional Crit from the student perspective. The results of the statistical analysis demonstrated that the experimental crits performed equally or better than the Traditional Crit in terms of any significant differences found using Paired Sample t-tests. They also demonstrated that some crits were better at aspects which could be considered to be different to, rather than better than, the Traditional Crit, and so the results indicate that different crits might better suit different teaching situations and contexts or learning outcomes.

Aspects where the alternative crits performed better than the Traditional Crit were in the areas of insight into the marking process (the Open Marking Session), individualised focus (the Performance Review), and as interim crits (the Open Marking Session, and the Speed Crit). Both the Open Marking Session and the Speed Crit were more likely to be considered informal and relaxed than the Traditional Crit, with the Traditional Crit being more likely to be considered "a formal and special event" than the Open Marking Session.

The Speed Crit was the only crit where the greater percentage of students considering it to be productive was statistically more significant than the Traditional Crit. There was no significant differences found when comparing the Judging Panel Crit with the Traditional Crit, and there was no statistically significant difference which indicated that the experimental crits were of lesser value in any aspect surveyed than the Traditional Crit. This finding validates the hypothesis that the alternative crits are viable teaching techniques.

The results of the statistical analysis of the internet survey also showed that students who had a negative experience of the crit were, in many instances, statistically less likely to conventionally benefit from a crit, particularly in the Traditional Crit. The perceived formality of the environment also appears to have been affected by how students' felt, with students who felt "nervous, frightened, intimidated," or "bored, unengaged, disinterested" being more likely to agree that a crit was "a formal and a special event" rather than "an informal and relaxed atmosphere," in contrast to students who felt "interested, engaged, actively involved" or "relaxed, at ease." The predominance of "interested, engaged, actively involved" and "nervous, frightened, intimidated" at either end of the positive and negative outcomes respectively both confirms what for many would be commonsense, and specifically highlights which positive and negative set of feelings appear to correlate with productive and unproductive aspects of a crit as a learning experience. They indicate that redesigning the Traditional Crit to reduce student anxiety is perhaps the most important ways of achieving learning outcomes. Given the result that 45% of students in the Traditional Crit chose "nervous, frightened, intimidated," aspects of: feedback reception, learning from other students, and understanding how their designs are evaluated, would likely improve significantly in crit contexts if the mechanisms which cause student anxiety in the Traditional Crit were mitigated. The alternative crit types demonstrate ways in which this might be achieved.

⁵⁶ Second year interior architecture student

⁵⁷ Third year architecture student

⁵⁸ Second year interior architecture student

⁵⁹ Third year architecture student

⁶⁰ Third year architecture student

⁶¹ Second year architecture student

⁶² Second year architecture student

The design of the experimental crits had been driven by a desire to investigate a variety of ways of reviewing work which would address issues such as:

- 1) sharing the current power-base more equitably between the design critic/teacher and the student in the presentation of student work
 - 2) being more time- and staff-efficient
 - 3) providing a greater variety of meaningful feedback to students in the context of both formative and summative assessments
 - 4) better supporting means of discussing work across the student group and guest crits
 - 5) involving active-learning techniques
 - 6) supporting the ambition to have a design crit format which contributes to the preparation of students for work in architectural practice
- and 7) engaging students in the presentation of the work of their peers

The reduced involvement of staff and use of peer feedback in the Judging Panel Crit and the Speed Crit most obviously re-balanced the power dynamics. The role reversal of presenter in the Open Marking Session took off the pressure felt by many students presenting in front of their class in a context which cannot be argued to be relevant to practice preparation⁶³ nor productive for learning. In addition, the requirement for staff to publicly mark the work gave the Open Marking Session a level of accountability, and enabled students an insight into a part of the process they are usually excluded from ("the strengths for me is the role reversal, you know the ability to see what the marker is thinking to hear it and to feel it - to not be removed from the process"⁶⁴). The Performance Review also made staff marking accountable, as the rationale for marking, rather than simply the explanation of the design, is presented to the student. While it can be argued that the student is marked in isolation from the class, the provision of a private and levelled space (both students and staff are seated) appeared to reduce the exposure and vulnerability of the students. They had to address their markers but were not susceptible to the pressures of performing in public ("standing up in front ..can be a little bit daunting sometimes"⁶⁵ "you're no longer standing on a stage"⁶⁶).

All four alternative crits were designed to either reduce the total time of the Traditional Crit, or the total time of critting and marking, or to reduce the requirement for staff input. The Performance Review took 10-15minutes per student and included marking, making the total time similar to that required for the Traditional Crit, but incorporated marking. The Judging Panel Crit minimised required staff input and, because multiple crits occurred simultaneously, reduced the total time taken overall. The Open Marking Session included formative marking, and reduced the overall time taken for critting. The Speed Crit reduced the requirement for staff participation as well as reducing the time taken overall for critting.

The Judging Panel Crit and the Speed Crit prioritised peer feedback. While not intended, the conflation of the crit and marking in the Performance Review provided a context in which students informally sought peer feedback and comparisons of marks ("afterwards was like "oh I got a B-, " "...got a B+," "Oh, did you hear [Student X] got a C+?" like, you know, like, So ... it was kind of nice to have it informal like that, and like, everyone was quite happy to share."⁶⁷). The Performance Review also provided a one-on-one, face-to-face discussion of the mark and the marking between staff and individual students, providing another new context for feedback, not ordinarily given to all members of a class, marks usually being received and not discussed individually in person. The Open Marking Session provided a ranking and discussion of marks and the strengths and weakness of each project. These different ways of receiving feedback on work were noticed by students, and the consistency with which students evaluated the feedback as good across the different crit-types (Qu 6), suggested this variation was productive.

The desire to better support discussion of the work across the student group and guest crits occurs across the range of different crit-types, rather than consistently in every type of crit; the Judging Panel and Speed Crits prioritising the student voice, and the Open Marking Session privileging the voice of the critic. The new crit types as a whole have definitely increased student participation in discussing work, rebalancing the previous focus on the critic, but this is an area that other new crit-types might look to, or that, with the increased use of the experimental crits, which encourage student participation, might shift the current bias in the Traditional Crit, which technically can accommodate a broader range of voices.

⁶³ In practice such presentations are unusual (except perhaps for Landscape Architects who work primarily in the public realm) being only usual in competition contexts or for large public schemes requiring public consultation. In these situations the power dynamics are different as the architect or designer is in a position of authority as an expert, which is very different to presenting in front of staff who are responsible for determining marked outcomes.

⁶⁴ Third year architecture student

⁶⁵ Third year architecture student

⁶⁶ Third year architecture student

⁶⁷ Second year interior architecture student

Both the Judging Panel Crit and the Speed Crit also prioritised active learning, in contrast to the usually passive engagement students have with other students' work during the Traditional Crit ("although the tutors may say "Oh everyone you know ... it's a group discussion," it doesn't really end up being [one]"⁶⁸). The Judging Panel Crit drew on techniques of collaborative problem solving, its structure encouraging student debate and discussion (requiring students to both present another student's work and to collaboratively come to a decision about the work's merits), while the Speed Crit placed students in a position where they were required to individually respond, in a one-on-one situation, to another student's work, with the pressure of speed removing the option of hesitation. The Judging Panel Crit's requirement for students to present another student's work mirrored a frequent requirement of practice, while the Performance Review, which used the private format of the review to also discuss with students about their working practices and behaviour in studio, mirrored the format of a performance review in a work context.

The idea that the Traditional Crit helps to prepare students for the "real" world is arguable, but this does not mean that crits should not engage with this notion, given that design and architecture are professional occupations. The Performance Review and the Judging Panel are the two clearest examples of drawing from professional practice. In addition to using the model of a work-like performance review, the process of presenting work to clients (for sole-practitioners) is more akin to the Performance Review Crit, than the Traditional Crit, as such discussions usually occur with all parties seated - an arrangement strongly appreciated by the students who saw this as defusing power differentials. The Judging Panel prepares students for a very usual practice, the need to present work that you did not design, or had limited involvement with. Architecture and design are often collaborative practices in the professional world, and the academic context where presentation and authorship are strongly tied is much more complex in the "real" world. That most students are not aware of this practice, given the academic practice of single authorship to aid assessment, is reflected in the lack of comment on this particular aspect connected to post-university life.

The function of a crit might be considered in terms of learning outcomes as discussed above, or in terms of the chronology of the design process, conventionally the interim versus the final crit. The final question (Qu 7) asked students to allocate a function (interim, final, or either interim and final crit) to each crit type, and showed a general preference for interim crit, suggesting that no crit type was favoured as an end of project crit. It is possible though that lack of familiarity may have created bias against the new crit types as final crit types. It might also be that favouring a crit type as an interim crit suggests its better capacity for feedback and learning opportunities, the Speed Crit clearly demonstrating favouritism as an interim crit. No one selected it as singly appropriate to be a final crit. The focus groups rarely raised issues of final vs interim crits clearly, with the exception of the Open Marking Session as being ill-suited as a final crit because of the public stating of marks. A key issue raised in relation to favouring the Traditional Crit as a final crit may be its perceived role as a bonding ritual, something which accrues over time as a meaningful custom, a phenomenon not available to the experimental crits.

These new crit-types have different relationships to the marking process, but what is more distinctive about them, and which is in contrast to the Traditional Crit, is that they are explicit about whether they are summative assessment. Currently (even within a single School of Design or School of Architecture) some teachers follow a philosophy that the crit is about discussing the work (and ideally its ramifications for design or how we think about design) and is not related to formal assessment. Other teachers consider the crit's role as verbal feedback in anticipation of marking. Others literally mark the work, on marking schedules, while the students are presenting the work.

The new crit-types differ in this respect. The Performance Review and the Open Marking Session explicitly mark the work, and while mechanically both could directly link to summative assessment, due to the public nature of the Open Marking Session, it is envisaged that open marking would only be used as an interim crit and formative assessment. The Speed Crit and the Judging Panel Crit provide formative feedback, rather than summative assessment. Depending on how teachers see the role of the crit and the durability of its feedback (i.e. focussed on a specific project, or cumulating over the career of the student) would determine whether or not they would select the Judging Panel Crit or the Speed Crit as a final class just prior to, or at the point of, project handins. The table below (**Table 6**) summarises this.

⁶⁸ Third year architecture student

	Staff Involvement (High vs Low)	Explicit Marking	Peer-to-peer learning	Peer-to-peer assessment	Class viewing of other student	Formative Assessment	Summative Assessment	Interim Crit	Final Crit
Traditional Crit	High								
Performance Review	High								
Speed Crit	Low								
Judging Panel Crit	Low								
**Open Marking Session	High								

Table 6: Crit Types and their Functions

5.3 Summary of Crit-Type findings

The research suggests that each of the new crit-types has specific strengths and might be selected at times to support specific teaching contexts.

Performance Review

The Performance Review received the strongest indication from students that they learnt how to improve their design (Qu. 4). It also provided good insight into the marking process (Qu 6), and students appreciated seeing their markers' conflicting ideas about the design (Qu 6). Particular to this crit-type was a high appreciation of being on the same seated level as the markers (Qu 6). These findings suggest that the Performance Review is a good way for students to understand the strengths and weaknesses of their projects, supported by an understanding of how this relates to their mark. It is focussed on the individual design project, rather than supporting student learning from seeing other student work.

Open Marking Session

The Open Marking Session performed most strongly in terms of students learning about design presentation (Qu 4), or representation and drawing (as distinct from presenting their designs in a crit). This is linked to the finding that this crit-type also taught students how others would understand their work (Qu 4), and was explicit in showing students that different staff might see different things in their work, and how this "conflict" was resolved (Qu 6). In this way the Open Marking Session strongly supports the assumption that designing is dependent on thinking and the repercussions of how to convey this to others, as well as how unintended ideas could be productively read from their work. This crit-type also provided strong insight into the marking process (Qu 6), and how a students' work was evaluated in relation to their class mates, as well as learning from what other students had done and how their work was received (Qu 6).

Judging Panel Crit

The judging Panel Crit was the strongest crit-type for students learning how to critique design (Qu 4). Linked to this is the high perception that the crit helped students look more critically at projects (Qu 6). This crit-type consequently appears to be the best crit for teaching students critical evaluation of work, a skill which would enable them to self-criticise their own work, with the aim of improving it. This crit-type also helped students understand how others would receive their work (Qu 4). The high levels of students who enjoyed talking about other students' work (Qu 5), and the high perception of the crit as creating a relaxed atmosphere (Qu 6), suggest that this crit-type might be particularly helpful for students new to design, and for creating a culture where students do not fear criticism, but rather understand it as a productive aspect of improving their and other students design work. The student appreciation of seeing and learning from other students' work (Qu 6), also suggests that the Judging Panel Crit might assist fostering a more collective and collaborative approach to design criticism.

Speed Crit

The Speed Crit achieved good performances in relation to helping students learn how to improve their design (Qu. 4), and how to present designs during a crit (Qu. 4). This crit-type's highest performance though was underpinned by more social, communal or interactive themes. The Speed Crit had the highest response to the description "interested, engaged, actively involved" (Qu 2), and for helping students learn about how others would perceive their work (Qu 4). Students also reported high levels of enjoying talking about other students' work (Qu 5), and appreciation of seeing and learning from other students' work (Qu 6). The Speed Crit was also perceived as creating a relaxed atmosphere (Qu 6). It appears that the Speed Crit normalises learning as a social activity, and again, like the Judging Panel Crit, might be useful in shifting perceptions about the crit from a punitive, frightening or anxious event to a socially attractive notion. The Speed Crit appears to be particularly accessible, and so especially useful for engaging students new to design and its culture of criticism, as well as performing well in all areas, except for its inability to provide summative assessment.

6.0 Conclusion: Further research and Key recommendations for good practice

The research results are positive and demonstrate the potential for new ways to engage students in the context of the design crit. While the Traditional Crit is a source of anxiety for a significant number of students (45%), it is also highly valued by students, almost as an initiation ritual, and a part of their identity as architectural and design students. While the Speed Crit was perceived as being the most productive crit, all of the experimental crits performed as good as, or better than, the Traditional Crit. Taking up these ideas fits into existing course structures, because they provide alternatives to the Traditional Crit, and are aimed at being located in a course at the interim and final design stages, the very points where the Traditional Crit currently sits.

As a result of the research a number of recommendations can be made in relation to good practice:

- 1) Introducing new crit types, via the interim crit, exposes students to new experiences of critique which are less intimidating to students.
- 2) Peer-feedback, evaluation and critique (as shown by the Speed Crit and the Judging Panel Crits) are valid ways of students learning from a crit context. Students considered such learning experiences as productive (especially in the Speed Crit).
- 3) New crit types are ways to emphasis specific aspects of learning. By introducing experimental crits (for example at the interim crit stage) students may learn targeted skills (e.g. critique in the Judging Panel crit, receiving criticism in the Speed Crit, understanding how their work is received and how to better communicate ideas in the Open Marking Session) which increase their confidence in Traditional Crits.
- 4) While the Traditional Crit is a point of anxiety, the focus groups indicated that it is still a highly valued learning tool, and, perhaps more importantly, a distinguishing factor of design education which students appreciate. Because it is valued, rather than simply replacing the Traditional Crit, supplementing it with other crit types may increase student skills and so reduce anxiety levels experienced in the Traditional Crit (e.g. critique skills in the Judging Panel crit, the skill of receiving criticism in the Speed Crit, understanding how the presentation of their work is received and how to better communicate ideas in the Open Marking Session and the Performance Review Crit).

Further areas of research include validation of the study over time to monitor whether newness of crit types impacted on results. Lack of familiarity may have impacted on student perception of the crit. This perception may have impacted on whether students consider the crit type to be better fitted to an interim, final, or both interim and final crit, because the full potential of the crit may not yet be apparent. Formal evaluation of staff perception of the crit types as teaching tools will also add to an understanding regarding the validity of the crit types. Comparative work regarding the quality of student work and different crit types was also not part of this study.

7.0 Acknowledgements

Thanks to Lauren Christie, Michael Dudding, and Mijntje Lepoutre who were the research assistants on this project, and to Ako Aotearoa for funding the literature review, focus groups, internet survey development, and analysis.

8.0 References

- Anderton, Frances "Response to Frederickson" *Journal of Architectural Education* (Winter 1990) 43(2):28.
- Anthony, Kathryn H. *Design Juries on Trial: the Renaissance of the Design Studio* (New York: Van Nostrand Reinhold, 1991)
- Anthony, Kathryn H. "Private reactions to public criticism: students, faculty, and practising architects state their views on design juries in architectural education" *Journal of Architectural Education*, (Spring 1987) 40 (3):2-11.
- Argyris, Chris "Teaching and Learning in Design Settings" *Architecture Education Study* ed. W. Porter and M. Kilbridge (New York: Andrew W. Mellon Foundation, 1981) 1:551-660.
- Blair, B. "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*, (2006) 5(2):83-95.
- Chadwick, Simon and Joanna Crotch "Mutual respect: working towards a modern review model: Research in Progress" *Art, Design and Communication in Higher Education* (2006) 5(2): 145-151.
- Crysler, C. Greig "Critical Pedagogy and Architectural Education" *Journal of Architectural Education* (May 1995) 48(4):208-217.
- Dannels, Deanna P., and Kelly Norris Martin, "Critiquing Critiques: A Genre Analysis of Feedback Across Novice to Expert Design Studios," *Journal of Business and Technical Communication* 22:2 (April 2008): 135-259.
- Dillman, Don A., Michael D. Sinclair, & Jon R. Clark "Effects of questionnaire length, respondent-friendly design and a difficult question on response rates for occupant-addressed census mail surveys" *Public Opinion Quarterly*, 57:3 (Autumn 1993): 289-304.
- Dutton, Thomas A. "Design and studio pedagogy" *Journal of architectural education* (Fall 1987) 41(1):16-25.
- Frederiksen, Mark "Design juries: a study in lines of communication" *Journal of Architectural Education* (1990):43(2):22-27.
- Hurt, Steven "Architectural education: the design studio: another opinion in defense of the obvious and not so obvious" *Architectural record* (January 1985) 173(1):49-55.
- Ilozor, B.D., "Balancing Jury Critique in Design Reviews," *CEBE Transactions* 3:2 (September 2006): 52-79.
- Krueger, Richard & Mary Anne Casey *Focus Groups: a practical guide for applied research* (Thousand Oaks, California: Sage Publications, 2000)
- Ledewitz, Stefani "Models of design and studio teaching" *Journal of Architectural Education* (Winter 1985) 38(2):2-7.
- Lightspeed Research "Questionnaire Length" (2008)
http://www.lightspeedresearch.com/pdfs/Questionnaire_Length.pdf
- Long, Kieran "Yale crits: what can the UK learn from one of the most prestigious schools in the US?" *Architects' Journal* (31 January 2008) 227(4):24-29.
- Machemer, Patricia L., and Pat Crawford "Student perceptions of active learning in a large cross-disciplinary classroom" *Active Learning in Higher Education* 8:1 (2007): 9-30.
- Percy, Christine "Critical absence versus critical engagement: problematics of the crit in design learning and teaching," *Art, design and Communication in Higher Education* 2:3 (2003): 143-154.
- Peterson, John M., "Me and My Critics: Students' Responses to Architectural Jury Criticism," *Studies in Art Education* 20:2 (1979): 64-67
- Rabiee, Fatemah "Focus-group interview and data analysis" *Proceedings of the Nutrition Society* (2004) 63: 655-660.
- Rhowbotham, Kevin "[Back to School: Architectural Education - the Information and the Argument]" *Architectural design* (September-October 2004) 74(5):77-82.
- Schon, Donald "The architectural studio in education" *UIA international architect* (1984) 5:46.
- Shannon, Susan "Student Design Presentations using the "Pecha Kucha" Method" *Studio Teaching Project* (Australian Learning & Teaching Council) http://www.studioteaching.org/?page=design_case_studies
- Shannon, S., Roberts, I, & R. Woodbury "vGallery Scaffolding Reflection in Action for Students and Teachers" *Meeting at the Crossroads*. Proceedings of the 18th Annual Conference of the Australian Society for Computers in Learning in Tertiary Education eds. G. Kennedy, M. Keppell, C. McNaught & T. Petrovic (Melbourne: Biomedical Multimedia Unit, The University of Melbourne): 141-144.
- Stevens, Garry "Struggle in the Studio: A Bourdivan Look at Architectural Pedagogy" *Journal of Architectural Education* (November 1995) 49(2):105-122.
- Wallis, Jillian and Joan Greig "Foundation knowledge? The case for an accretive studio model" *Curriculum Development in Studio Teaching: STP Case Studies of Effective Practice* ed. Stephanie Wilson and Karin

Watson (New South Wales: Australian Learning and Teaching Council Ltd, October 2009) 4:187-191,
www.studioteaching.org

Webster, Helena "A Foucauldian look at the design jury" *Art, Design & Communication in Higher Education*,
(2006) 5(1): 5–19.

Webster, Helena "Power, freedom and resistance: excavating the design jury" *International Journal of Art &
Design Education*, (2006) 25(3): 286–296.

Woolley, Tom & Lorna McNeur "Why studio?" *Architects' journal* (20 March 1991) 193(12):46-49,52-57.

Zeeng, Lynette "Capturing, Analysing and Critiquing the Visual image Using Web 2.0 in Studio Classes" *Studio
Teaching Project* (Australian Learning & Teaching Council)
http://www.studioteaching.org/?page=design_case_studies

9.0 Appendices

9.1 Appendix A

Focus Group Questions

- (1) What was your general impression of the X crit?
- (2) What did you learn (about your work/about others' work) from the crit? How would you describe your understanding of your work and of other students' work as a result of attending the crit?
- (3) What did you think about the length of time involved in the crit? How would you describe the quality of the time spent during the crit? How much of the time did you find you were actively engaged and involved in the crit?
- (4) How would you describe the involvement of staff/guest crits? How would you describe the relationship between the evaluation/marketing of student design work and this crit process? How would you describe the relationship between this crit process and how design work might be presented in the context of architectural practice?
- (5) How confident did you feel about how your work was engaged with (before/during/after the crit)? How would you describe how the group of student work was considered/engaged with during the crit? Did you feel you/your work were/was taken seriously? What determined the successful reception of design work?
- (6) How do you think this type of studio design crit compared to other design crits you have Experienced? What were the key dynamics of the crit? What are the strengths and weaknesses of this type of design crit?

9.2 Appendix B

Guide to Running Focus Groups

- (1) Begin by thanking the participants for coming, and explain the information sheets and consent forms. Give the participants time to read these and ask them if they have any questions.
- (2) State that the focus group will take 1-1.5 hours. Explain that if everyone consents that the focus group will be recorded (and that a recording is to help with note-taking and that it will be erased after confirming notes) and ask if the participants are all comfortable with being recorded.
- (3) To begin the focus group ask people to introduce themselves.
- (4) Explain that the aim of the focus group is to get a range of possible responses for each of the questions that are asked. We want to understand the different perspectives that people might have so we can design a good questionnaire for the later survey.

Also explain that everyone will see things slightly differently and we are interested in knowing the range of opinions that the group has. Because of this it is really important that no one dominates the discussion so that you will be trying to make sure that everyone gets a chance to comment or answer questions.

Explain that you ask a question there will be time for the participants to first write down their answer before a general discussion, so they have time to consider their opinion before hearing others.

With 6 questions there is 10-15min per question.

9. 3 Appendix C

Internet Survey Questionnaire

The questionnaire had five sections, which were answered by different groups of students, depending on the crit-types they experienced. The questions were largely repeated, though because of differences in the crits, slight variations were made as indicated below. The first question asked students to identify their class in order to allocate sets of questions.

Q2. Which of the following sets of words BEST describes how you felt during the X CRIT? [single answer multichoice]

interested, engaged, actively involved
nervous, frightened, intimidated
exhilarated, excited
bored, unengaged, disinterested
relaxed, at ease
tired, sleepy, exhausted

Q3. Overall, how would you describe the QUALITY of the TIME you spent in the X CRIT? [single answer multichoice]

productive
unproductive

Q4. Order the following statements to BEST describe what you learnt from the X CRIT. Drag and Drop the Statements to create the right order. [rank order]

I learnt how to improve my design
I learnt how to improve the presentation of my design
I learnt how others would understand my work
I learnt how to critique design
I learnt how to present my work during a design crit
I didn't learn anything

Q5. Which of the following BEST describes your ability to comment on other students' work in the X CRIT? [single answer multichoice]

I enjoyed talking about other students' work
I didn't want to comment on other students' work in case I was wrong
I didn't want to comment on other students' work in front of the whole class⁶⁹
It was easy to comment on other students' work because the designer of the project wasn't present⁷⁰
It was easy to comment on other students' work because the teachers weren't involved⁷¹
I didn't comment on other students' work⁷²

Q6. Indicate the degree to which you agree or disagree with the following statements about the X CRIT. [Likert scale: Strongly Agree/ Agree Somewhat/ Neither Agree nor Disagree/ Disagree Somewhat/ Strongly Disagree]

It was an informal and relaxed atmosphere
It was a formal and special event
I received good feedback
It had a concentrated one-on-one time/individualised focus
It was good preparation for practice in the "real" world
It was good to be seated and on the same level as the markers⁷³
It was good to see the markers' conflicting ideas⁷⁴
It was a good session to bring people together⁷⁵
I gained insight into the marking process⁷⁶
It made us look more critically at the projects⁷⁷
It was good to see and learn from other students' work⁷⁸

⁶⁹ Traditional Crit Only

⁷⁰ Judging Panel Only

⁷¹ Judging Panel; Speed Crit

⁷² Traditional, Judging Panel, Speed Crit

⁷³ Performance Review Only

⁷⁴ Performance Review; Open Marking Session Only

⁷⁵ Open Marking Session Only

⁷⁶ Traditional; Performance Review; Judging Panel; Open Marking Session Only

⁷⁷ Judging Panel Only

Q7. The X CRIT is BEST used as
[single answer multichoice]
an interim crit
a final crit
either an interim crit or a final crit