

INTERNATIONAL CONFERENCE ON ENGINEERING AND PRODUCT DESIGN EDUCATION  
3 & 4 SEPTEMBER 2015, LOUGHBOROUGH UNIVERSITY, DESIGN SCHOOL, LOUGHBOROUGH, UK

# A PRELIMINARY COMPARISON OF DESK AND PANEL CRIT SETTINGS IN THE DESIGN STUDIO

**Patrick PRADEL, Xu SUN, Bruno ORO and Wang NAN**

Department of Mechanical, Materials and Manufacturing Engineering, the University of Nottingham Ningbo, China

## ABSTRACT

'Desk Crit' has been described as the most important critique setting for teaching design. This approach has been shown to be beneficial in providing different perspectives on design problems to students and bridging to professional practice. However, some issues may be envisaged in this style. In this paper, we try to address these issues by adopting a panel based critique setting named 'Panel Crit' in a second year product design studio. The 'Panel Crit' setting is then compared with the 'Desk Crit' setting through a questionnaire and a structured interview with 16 students. The survey protocol is based on an evaluation of teaching survey and consists of 12 close-ended and three open-ended questions. The protocol compares the critique styles across four dimensions: communication, learning, feedback and satisfaction. The preliminary results reveal the effectiveness of a panel-based critique in providing unambiguous feedback, avoiding multiple presentations and increasing time efficiency during studio sessions. However, our results confirm previous research findings which highlight the importance of 'Desk Crit' in conveying fundamental design skills, introducing students to design practice and showing practitioner's approaches to design problems. We believe our findings could contribute to the understanding of how critique settings impact student's learning experience in design studio.

*Keywords: Design education, design studio, design critiquing, critique setting, studio-based learning.*

## 1 INTRODUCTION

Since the end of the 19th century, critique has been recognised as a central element of design, architecture and art pedagogy [1-4]. Among the different types of critique setting [2, 3, 5-9], desk crit has been considered for being the most effective [10-12]. It's benefits have been emphasized in its capacity to supervise each student's progress over time [8, 10], in enabling design instructors to lead individual students to see their design problems from a professional viewpoint [3] and in conveying an extensive range of fundamental design knowledge [11]. However, in a design studio module of a second year product design and manufacture programme, we envisaged some issues regarding this setting. For instance, it was noticed that desk crit setting led to advices/comments being often repeated and some advices/comments were contradictory, resulting in students' confusion. Moreover, not all learning outcomes were met, as tutors focused on some aspects of the project only. The one to one tutoring was identified as the main problem. In addition, with desk critique students have to present the same project progression every time to each educator. This may dissuade some students to present all the aspects of their project to all the educators, so that some educators get a different perception of the project. Finally, in 'Desk Crit' students may over-rely on educators' coaching, which may impede the development of their independent thinking and problem solving attitude. In order to tackle these issues, we develop a new critique setting that we called 'Panel crit'. In this setting students present informally to a panel of instructors their project progress and each instructor gives a feedback in a three-to-one discussion. This article presents the 'Panel crit' setting and a preliminary comparison with the desk critique from a student perspective. In order to perform the comparative study between the settings a case study methodology has been adopted with a quantitative and qualitative approach. This paper is organized as follows, section 2 presents a literature review on desk crit in Studio-based learning, section 3 the description of the critique settings tested in project, section 4 the methodology adopted, section 5 a description of the results and section 6 the discussion and conclusions.

## 2 DESK CRIT IN STUDIO-BASED LEARNING

Desk critique also called crit or preliminary crit has been defined as a form of intermediate formative assessment that takes place in the studio-based learning environment [5, 9, 12]. This critique setting takes place as an active one-on-one informal discussion between design student and one or more tutors, in which each tutor separately gives a formative feedback on student's problem solving process and work [2]. This form of critique is held daily or twice weekly during the design studio sessions for an average time of 20 to 30 min per student [2, 13], typically at the student's desk [2, 5] and often takes place during the entire period (typically a semester of 12 or 16 weeks) of a studio module [8]. During the critique, the tutor reviews the student's progress by looking at the student's preliminary material, which could be found in form of research reports, sketches, sketch models, CAD models, renderings, prototypes and visual presentations [2, 13]. Often the form of the material is required by the tutor, based on the different stages of the design process, or left up to the students, if they have achieved an adequate level of expertise [2]. Looking at the student's work, the tutor identifies the issues of the student's project then proposes particular improvements to the design, that he or she feels will be better solve a particular aspect of the problem [2, 9, 13]. Concurrently, the tutor shows to the students a practiced process of inquiry, different viewpoints and solutions of the problem [11] and how to reflect on his/ her own process of designing [2]. Finally, the tutor initiates the student to a specific language about designing. In doing so, he/she acts as a master demonstrating the appropriate behaviour, values, design strategies, and thought processes that professional designers use [14]. After the critique, the student has to critically assimilate the comments from the tutors and further explore and revise his/her design. In the following studio sessions, the tutor will then review the student's work and suggest further improvements until the end of the project [9, 13]. Several contributions to design pedagogy have been correlated to desk critique. Desk critique does not only provide a tool to highlight problems in students' designs but it is also considered the primary site for bridging students into professional practice [1, 5], introducing design professional language [2, 9], improving students' capacity to communicate design ideas and process [1], providing different solutions or perspectives to problems [3, 9, 11] and pushing students to think and be critical about their own work [13]. However, also different limitations has been highlighted with desk crit. Dutton underlined how in desk crits the overpowering authority of the instructor discourages students from participating freely in debate, asking questions, and reflecting on their own designs [8]. Other studies revealed how students may feel they are expected to work round-the-clock to prepare for the critiques, with little time devoted to sleep or healthy eating [15]. Additional studies reported that during critique sessions, students described feelings of embarrassment, humiliation, frustration and not being heard during their presentations (Anthony 1987) [9]. Furthermore, Utaberta emphasised how these feelings could have a further detrimental effect by orienting students to just look for tutors' acceptance and if this doesn't happen, by feeling disappointed, losing other statements and suggestions coming after and focusing only on the exact solution. Beside this, also tutors may experience frustration and believe that students don't grasp what they told and act different from what expected [9]. Kosara also highlighted the importance of tutors experience in avoiding arguments based on taste and preferences instead of objective principles and the risk that critique could limit the exploration of new and unusual ideas when adopted too early in the creative process. [4] Some design educators have also decided to remove public critique settings from their design studio [15]. Utaberta created a list of weak points of critique. According to the study, critique seems to limit collaboration and participation between students, to lower tutors' feedback because it could interfere to students' creative process, to provide ungrounded feedback without giving suggestions about what students can do, to put pressure on tutors due to high tutor-student ration, to focus on the "end product" instead than on the process, to compare students with each other and to have a strong emotional impact [13] which intensify students' stress and anxiety and consequently impacts on student learning.

## 3 PROJECT SETTING

The project has been carried out during a second year design project module in a bachelor degree in product design and manufacture. The module was convened during autumn 2014 by two full time academic staffs and two part-time design consultants, tutoring sixteen students for four hours twice a week. The module lasted for twelve weeks, in which three different briefs were given to the students. Students had four weeks to complete each of the briefs and present the final design. A desk critique

setting was applied during the first brief, while a panel crit setting was applied during the second and the third briefs.

### 3.1 Desk crit setting

The first project was based on a desk critique setting. During this project, students were requested to develop a child outdoor toy. The tutoring sessions were on a one to one (one tutor-one student) basis and the students were free to select their design method. Thus students were allowed to manage their own schedule. Figure 1 shows the layout of the setting, in which students were sitting in their desk and tutors walked around to give individual feedback.

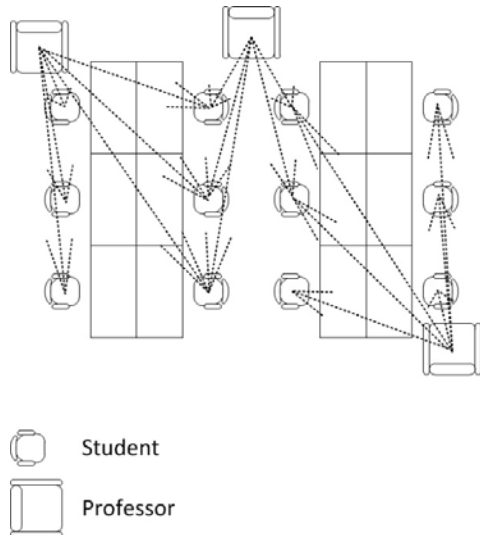


Figure 1. Plan of the desk critique setting

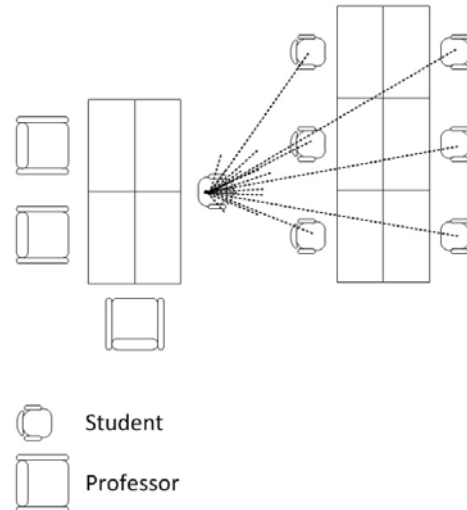


Figure 2. Plan of the panel critique setting

### 3.2 Panel crit setting

During the second and the third brief, a panel critique setting was adopted during the studio sessions. The products the students had to design during these two projects were a set of sport accessories (goggles, water bottle and watch) and a parabolic electric heater. 'Panel Crit' refers to a critique style where a panel of faculty and non-faculty members (usually local professional designers) reviews informally an individual student over his/her progress each design studio session. Figure 3 shows the plan of the panel crit setting. In this setting, usually three tutors sit around a table and each student at the time comes to present his/her progression. Each of the tutors gives his/her feedback. To improve students' project management, students were given a design methodology and specific tasks to be completed during each session. The design method was built in different stages covering research, data analysis, concept generation, development of technical aspects and communication (Figure 3).

Problem	Data Collection	Data Analysis	Concept Generation	Creativity	Development	Communication
Interpretation of the brief • Requirements • Possibilities	Product autopsy • Product components  Try it yourself • Product testing  Target definition • Country • Culture • Subculture	Target user • User persona • Income average • Age group • Daily life  Future forecasting • What people are doing • What is the current trend	Design attribute • 3-5 attributes  Creative techniques • Brainmap • Brainstorm • 2 extra (compulsory)  Moodboard • Target user • Concept • Reference for creation • Environment of use	Idea generation • Sketches • Sketch-models • Thumbnail sketches	Final design • Sketches • Exploded view • Selection of materials • Selection of manufacturing processes • Engineering drawings • Ergonomics	Presentation material • Digital illustration • Moodboard • Other boards

FINAL PRESENTATION

Figure 3. Design methodology adopted in brief 2 and 3

For each step, the students' performance was evaluated as task completed, incomplete or failed to present. The evaluation of the students' performance was made by all tutors to ensure consistency and each step was assessed to ensure that problems were spotted early on and that students performed all the steps.

#### 4 METHODOLOGY

A case study approach [16, 17] using mixed methods [18-20] was implemented to inform the study. The quantitative data was collected using a 12 items Likert scale questionnaire based on a form for student evaluation of teaching already employed at the institution. The 12 items of the scale covered the topics of communication, effectiveness in learning, feedback and learning experience. Instead, the qualitative data was gathered through a structured interview protocol based on three open-ended questions. Three of the four authors of the paper, were design instructors in the module and they participated as faculty staff to all the critiques. The other author has 6 years' experience of Studio-based learning and he was responsible for surveying and interviewing the participants, but he was not involved in the critiques and he hadn't taught to the students before. This ensured that the students were not afraid to express their opinion about the settings during the structured interview.

#### 5 RESULTS

Over 17 students that participated to the design studio, 12 questionnaires and interview were collected and included in the study. The results were analysed and processed to compare the difference under two conditions (i.e. desk crit approach and panel crit approach). Both quantitative data (users' ratings) and qualitative data (users' comments) were gathered during the study. For quantitative analysis, data was aggregated over the four factors (i.e. communication, effectiveness in learning, feedback and learning experience), and differentiated according to the main within subjects factor. This showed how these factors varied according to difference design teaching approaches. Wilcoxon Sign test in Siegel and Castellan [21] for non-parametric data were calculated for the main within-subjects factors. Quantitatively, a Wilcoxon Sign test for two dependent samples showed students' rating in Panel crit approach is significantly higher than that in a desk crit approach ( $N= 16, z=-2.202, p < .05$ ). The Wilcoxon Sign test further showed a significant difference in the aspect of 'communication', according to whether they were using panel crit approach or a desk crit approach ( $N= 16, z = -2.224, p < .05$ ). No significant differences were found in statistics in the aspects of 'effectiveness in learning' ( $N= 16, z=-1.56, p > .05$ ), 'feedback' ( $N= 16, z=-1.533, p > .05$ ) and 'learning experience' ( $N= 16, z=-1.225, p > .05$ ). Summary diagram is shown in Figure 4 to present the mean assessment for condition, based on whether the participant was undertaking the desk crit, or panel crit. The ratings shown for each condition are a mean, equally weighted score across the four dimensions (i.e. communication, effectiveness in learning, feedback and learning experience). The ratings shown are aggregated scores on 'strongly like' (5) to 'strongly dislike' (1) scales. The error bars represent +/- 1 SD of the mean in all cases.

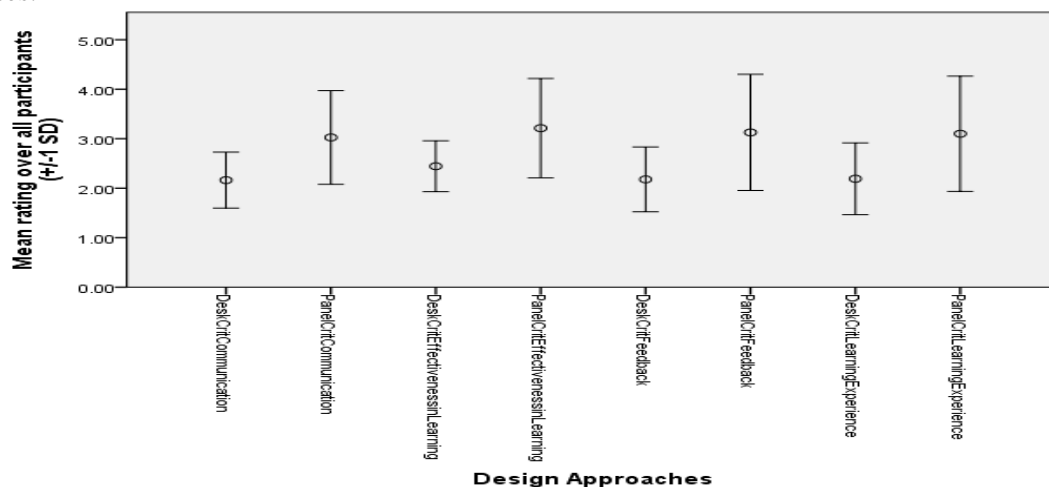


Figure 4. Comparison between crit settings

The qualitative data (interviews data) were analysed using an Emergent Themes Analysis approach [22] to categorise the verbal data from the case. The answers of the open-ended questions were

transcribed on a computer-assisted qualitative data analysis (CAQDAS) software and analysed. The analysis found 26 themes, however, theme highlighted by only one student were excluded from the study resulting in 14 themes. Table 1 shows the summary of the positive and negative aspects.

*Table 1. Positive and negative aspects of desk and panel critique from open-ended questions*

	Positive	n'	Negative	n'
<b>Desk crit</b>	More detailed feedback	4	Not enough time to discuss with each tutors	4
	Different perspectives	4	Not time efficient – there no time for work	2
	More communication	4		
	Tutors are freer to express their opinion	2		
	Caring	2		
<b>Panel crit</b>	Time efficiency	7	Lack of detailed feedback	10
	Feel more motivated to work	3	Focus on evaluation rather than formative feedback	9
	Clear direction	2	No time to contact the tutors after the crit	2

The more prominent positive aspects of desk crit that were experienced by the students, were the possibility to have a more detailed feedback on their work, the different perspectives on their project given by the different tutors and generally a capacity to have more communication with the tutors. From the point of view of the negative aspects, the students highlighted that desk critique doesn't give them enough time to discuss with each tutor and that the time is not managed efficiently during this setting. For instance, the time between a meeting with one tutor and another is considered wasted because not enough to work on the project. Panel critique received generally more feedbacks from the students. From the side of the positive aspects, the students strongly highlighted that this setting was more time efficient than the previous because there were less interruptions to their work. They also felt more motivated to work due to pressure caused by the panel. Then two students highlighted that there was a clearer direction compared to desk crit. On the other side, three main negative aspects of panel critique emerged from the students' answers. The first main negative aspect was that the feedback of the panel critique was considered by the students not detailed enough as compared to the feedback received from the desk critique setting. The second negative aspect was related to the focus of the feedback that was perceived by the students more as evaluative rather than formative. Finally, two students stressed that in the panel critique setting there is only one time to contact the tutors during a studio session and consequently there was no possibility to have a second critique during the session were to ask more explanations and check if they had understood correctly the.

## 6 DISCUSSION AND CONCLUSION

The results of this study are not intended to be generalizable across different institutional settings and disciplines due to the limited number of students' sample and the analysis of only one factor of design critiquing (the critique setting) [8]. Furthermore, our work primarily focused on capturing the students' perspectives rather than teacher–student interactions. Nevertheless, we believe we have gained a deeper understanding of the design critique setting through our analyses. Our study underlines the value of desk critique setting as a valuable pedagogical tool for studio-based learning. The individual interaction between students and instructors [2], the opportunity to listen to different perspectives on the design project [3, 9, 11] and the capacity to give detailed in-depth feedback [8, 10], are some of the desk crit aspects that our study corroborates to be appreciated by design students. However, we also found one main drawback of this setting which is time efficiency. Although, our class size was only of 16 students, this issue was emphasized in the open-ended answers. Compared to desk critique, our study shows that panel crit has been generally perceived as less beneficial by the students. Quantitative data shows that in each of the four factors (i.e. communication, effectiveness in learning, feedback and learning experience) panel crit achieves always a higher mean and a broader standard deviation if compared to desk crit. Qualitative data supports these results by highlighting how panel crit didn't provide feedback at the same level of depth as desk crit. Students also stressed that the kind of feedback they received in panel crits was more evaluative than formative, which they perceived less useful for their development. However, some positive aspects were also emphasised, such as the more efficient management of time and the improvement of motivation. From our perspective as design tutors, we considered these aspects quite important especially if considered in light of the initial issues that we wanted to address at the beginning of the study. In relation to those issues, we found that contrasting feedback can be perceived by some students as confusing, but by

other as a pedagogical opportunity. We consider this in line with Carmel-Gifilen and Portillo study, where even beginner design students were able to appreciate the contribution of different viewpoints [12]. The study has also shown how a panel critique setting could improve time efficiency one of the main drawbacks of desk crit. Finally, the methodology applied in our study was not capable to investigate the issue of students over-relying on educators' coaching. From our survey, students seem to appreciate tutors coaching; however, we found difficult to confirm if this is beneficial or detrimental to their development as professional designer and in which stage of their educational path this should be emphasized or minimised. Further studies, should investigate this issue by considering different critique factors in addition to the setting.

## REFERENCES

- [1] K. M. Murphy, J. Ivarsson, and G. Lymer, "Embodied reasoning in architectural critique," *Design Studies*, vol. 33, pp. 530-556, Nov 2012.
- [2] J. A. Lackney, "A History of the Studio-based Learning Model," 1999.
- [3] B. Uluoglu, "Design knowledge communicated in studio critiques," *Design Studies*, 2000.
- [4] R. Kosara, F. Drury, L. E. Holmquist, and D. H. Laidlaw, "Visualization Criticism," *Computer Graphics and Applications, IEEE*, vol. 28, pp. 13-15, 2008.
- [5] T. Schrand and J. Eliason, "Feedback practices and signature pedagogies: what can the liberal arts learn from the design critique?," *Teaching in Higher Education*, vol. 17, pp. 51-62, 2012.
- [6] A. Oak, "It's a Nice Idea, but it's not actually Real: Assessing the Objects and Activities of Design," *International Journal of Art & Design Education*, vol. 19, 2000.
- [7] C. B. Brandt, K. Cennamo, S. Douglas, M. Vernon, M. McGrath, and Y. Reimer, "A theoretical framework for the studio as a learning environment," *International Journal of Technology and Design Education*, vol. 23, pp. 329-348, 2011.
- [8] Y. Oh, S. Ishizaki, M. D. Gross, and E. Yi-Luen Do, "A theoretical framework of design critiquing in architecture studios," *Design Studies*, vol. 34, pp. 302-325, 2013.
- [9] N. Utaberta, B. Hassanpour, A. N. Handryant, and A. I. Che Ani, "Upgrading Education Architecture by Redefining Critique Session in Design Studio," *Procedia - Social and Behavioral Sciences*, vol. 102, pp. 42-47, 2013.
- [10] A. Koch, Schwennsen, K., Dutton, T. A., & Smith, D., "The redesign of studio culture: A report of the AIAS studio culture task force," The American Institute of Architecture Students 2002.
- [11] G. Goldschmidt, "One-on-one: A pedagogic base for design instruction in the studio," presented at the Common Ground Design Research Society International Conference, Brunel University, 2002.
- [12] C. Carmel-Gifilen and M. Portillo, "Where what's in common mediates disciplinary diversity in design students: A shared pathway of intellectual development," *Design Studies*, vol. 33, pp. 237-261, May 2012.
- [13] N. Utaberta, B. Hassanpour, A. I. C. Ani, and M. Surat, "Reconstructing the Idea of Critique Session in Architecture Studio," *Procedia - Social and Behavioral Sciences*, vol. 18, pp. 94-102, 2011.
- [14] D. A. Schön, *Educating the reflective practitioner / Donald A. Schòn*: Jossey-Bass, 1987.
- [15] K. Cennamo and C. Brandt, "The "right kind of telling": knowledge building in the academic design studio," *Etr&D-Educational Technology Research and Development*, vol. 60, pp. 839-858, Oct 2012.
- [16] R. K. Yin, *Case study research : design and methods / Robert K. Yin*: SAGE, 2014.
- [17] L. Hamilton, C. Corbett-Whittier, and A. British Educational Research, *Using case study in education research / Lorna Hamilton & Connie Corbett-Whittier*: SAGE, 2013.
- [18] J. W. Creswell, *Research design : qualitative, quantitative, and mixed methods approaches*: SAGE Publications, Inc., 2014.
- [19] A. Tashakkori and C. Teddlie, *SAGE handbook of mixed methods in social & behavioral research / edited by Abbas Tashakkori, Charles Teddlie*: SAGE, 2010.
- [20] S. N. Hesse-Biber, *Mixed methods research: merging theory with practice*: Guilford Press, 2010.
- [21] N. J. C. J. Sidney Siegel, *Nonparametric Statistics for The Behavioral Sciences*: McGraw-Hill, 1988.
- [22] J. C. R. JoAnn T. Hackos, *User and Task Analysis for Interface Design*: John Wiley & Sons, 1998.