Increasing Design Reflection and Improving Feedback using Wikis

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Abstract. *As architects and educators we are all aware that the methods by which we teach the subject of architecture, and particularly design studio, is different to other lecture based courses. With increasing institutional financial pressure coupled both with increasing student numbers and student expectation of quality feedback, the problems are compounded. Increasingly, we look to technology to provide the answers.*
Keywords. *Wiki; design reflection; pedagogy; feedback.*

Introduction

The use of technology in teaching studio design in architecture has largely focused in two areas – Virtual Design Studios and the use of CAD. The actual day-to-day teaching of design in schools of architecture is still done face to face, either individually or in small groups in a tutorial with a design tutor. These work well where the student has prepared for the tutorial but, with increasing student numbers, there is often not the luxury of sufficient time to give to all students. More often than not, it is the weaker students that need either need more help or more importantly counteract poor attendance brought on by a lack of confidence. We have been interested to see whether interacting digitally would help in these cases. Equally, students rely on good quality feedback in reviews to progress their personal design agendas. This paper reports on a project that has been looking at both these two areas.

Part 1 - wikis in the design studio
A Wiki is a set of collaborative web pages which allows both the author (in this case the student) and others to edit it. In this project, students record the research and development of their project and the staff and other students can add comments to the pages. As these are constantly updated, it allows much more immediate feedback and so the opportunity for more design development. The use of wikis is now firmly entrenched in both teaching from both a student and teacher viewpoint. Sometimes, the use of resources such as Wikipedia is too often the first port of call.

At Liverpool, we have been using wikis for some years (eg Brown, Knight, Winchester 2007) in a non-studio environment and we were keen to expand its use to design modules which were supported in the 'traditional' way of on to one tutorials and pinup reviews. The current project has been extending this to studio projects. By encouraging the students to record and reflect on the progress of their work on a regular basis, the aim was to see whether students would be able to get credible and usable feedback both from tutors outside of formal tutorials and from other students tackling the same problem. Whilst the traditional studio culture allows this, there is no doubt that pressure on studio space and on staff

time from increasing student numbers means we are seeing more students working independently away from studio. It is worth pointing out that this is currently in addition to the normal timetable tutorials, but gives students an extra opportunity for feedback and reflection on their design.

The University of Liverpool has a interactive learning portal called VITAL (Virtual Interactive Learning At Liverpool). The software environment is based on the widely used Blackboard system and, as with most large institutional systems, is very tightly controlled allowing an absolute minimum of customisation and flexibility for its users. For design orientated students, this is (and continues to be) a major source of frustration.

VITAL is used in a variety of ways, from a basic use as a resource repository to more advanced uses with wikis, discussion boards and podcasts. With increasing digital awareness from students, there is an expectation from students of increasing use of the facility.

The research was carried out with a group of sixteen students undergraduate first year students and a group of seventeen more experienced MA Architecture students, a group of sixteen / seventeen representing a typical tutor group size. The BA students were a typical mix of UK and overseas students, largely straight from school whilst the MA were all overseas from a variety of backgrounds, both architectural and non-architectural.

Apart from the complexity of the design project, the main difference between the two groups was the extent of group work which was largely dictated by the demands of the course. The wiki pages were reviewed by the studio tutors before the regular tutorials and formed the basis of the tutorial discussion along with conventional drawings/models/sketchbooks etc. First year students are encourage to work in the Schools main studio area to help establish a studio culture. They either used their own laptops in the studio or the occasionally, the computers in an adjacent lab.

Although the MA students are a relatively small group and have a dedicated studio area in which to work, the majority of them work independently away from the studio. Their design project was for a complex sustainability project set on an environmentally sensitive island. As all the students are from overseas, there was considerable difficulties in coming to terms with the differences in design approach both from a cultural and from an environmental point of view. It was decided at an early stage that group site appraisal would form a core starting point to the project.

Working in small groups, the students collaborated on given areas of the appraisal. It was interesting to note the differing levels of interaction and levels of digital contribution. There was a high level of self-organisation between research and digital creation. Once the individual wikis had been created, there was a group seminar presentation using the wikis as a presentation medium. Students then formed their own conclusions and started their individual design wikis.

Some thoughts on difference in wiki use.
The rational behind the use of the wiki for both groups was that it should be a digital sketchbook - a method by which the individual student and tutor could reflect on the design process. Whereas the group site work wikis could be viewed by anyone in the year group, the individual design wikis were setup to be viewable by the 'owning' student and the tutors. What was interesting was that after only a couple of days, the students made representations that wikis should be available to all both for viewing and for comment.

This contrasted with the BA student group who wanted to keep the wikis private, but were more successful in using it as a design diary (figure 1); uploading sketches and responding to comments with other wiki comments. In contrast, the MA group tended to use the comments as points for discussion in tutorials and rarely responded within the wiki itself.

However, there were more marked differences in attitude between the different groups. The BA

Figure 1

students were one tutorial group of 16 in a year of 108, so some of them quickly perceived the wiki research as unnecessary extra work rather than an opportunity for a different design process. It is a sad reflection that, for some students, assessability counts for more than an educational opportunity. On the other hand the more experienced MA students largely grasped the opportunity and used it to interact both with themselves and with the tutors.

There is also the difference in tutorial frequency which will have had an influence. First year student get two tutorials per week whereas the MA students only get one. It is to be expected that the students who see their tutors less might make more use of the opportunity for feedback by other means.

Feedback from students

The undergraduate students initially expressed interest in the project but for a few this soon waned when they realised that the work was un-assessed. For the ones that did embrace it, they found it useful but, as they were also having to create a wiki in parallel with the 'normal' studio work, the wikis very much took a back seat in terms of regular updating. Most students complained about the lack of design

freedom in VITAL and either gave up any attempt at designing the page or resorted to large Photoshop'd images which, with some inevitability, led to upload problems. Overall it became a frustrating experience.

Possibly because they had all completed a previous degree, the MA students were more positive in attitude. Whilst they still had the same reservations over restrictions in the design of the wiki, they did not use this as an excuse for avoiding it. The majority of the feedback was very positive, particularly in the ability to get regular feedback outside of the normal studio times, but the feedback remained largely in one direction, it rarely initiated a discussion. In discussion with the students, it emerged that this was largely a cultural matter in that some felt it inappropriate to enter into a discussion outside of the tutorials.

Part 2 : audio feedback

The second strand aimed to provide a better quality of feedback to the students. The typical scenario (of which we are all familiar) is of one or more reviewers seated in front of the student work 'discussing' the merits of the work. Inevitably, one of reviews has to take notes at the same time to provide a record

of comments for the students. Towards the end of a long days reviewing, the comments become more terse, the writing more illegible, or worse still the reviewer tries to complete a generic set of notes the following day. The advantage is the immediacy of the feedback, but frequently the end result is a fairly poor level of feedback. Nominating a student 'buddy' to take notes provides a backup, but can be unreliable.

Research this university in the Department of Sociology (King, McGugan and Bunyan, 2008) and others has shown that students value audio feedback on their work. King et alt work was providing audio feedback for written assignments and we were interested to extend this to the design studio.

The reviewer was asked to record a set of audio notes on a digital recorder on the design as the review is progressing. The intention was to add an audio file to the to the students wiki pages as an immediate record of the review. Additionally, the notes were then to be transcribed using digital transcription software to form the basis of the physical review notes. Initial tests were promising, but several problems emerged during a full review that showed that further work is needed before this can become a workable tool.

Problem 1 : High levels of background noise
Several types of digital recorder were tried from smartphones (both iPhone and Android), digital voice recorder (Olympus WS 560M) and a Roland hand held digital recorder intended for music use. Using their built in microphones resulted in a file that was understandable to the human ear if recorded in normal speaking voice, but the audio transcription software (Dragon Naturally Speaking 10) could not cope. The only workable solution was to record comments after the review had finished, but speaking in a normal conversational level of speech gave rise to problem 2.

Problem 2 : Lack of privacy
Students should be able to expect a level of privacy in their written feedback, it is their choice to share comments with their peers. However, when comments are recorded at a level that could be used for transcription, it is inevitable that students overhear what is being recorded. Comments from some students expressed the view that they felt that this was in some cases inappropriate, particularly where the presented schemes were less than satisfactory.

Problem 3 : digital transcription software
Transcription software has come a long way and, in the environment for which it is designed (ie a quiet office or meeting room with one person talking) it is very effective. But in a noisy environment, it creates so many errors that it is quicker to type directly onto a laptop.

Conclusions

The end result was intended to be a project Wiki that documented the design process from start to finish, had input from the student, his/her tutor and other students, together with feedback from the project review. The aim was to provide a digital resource that the student could revisit at subsequent stages of their course and reflect on their progress, and review areas where their design approach had not worked as well as they intended. Review of these pages prior to the next design task should enable the student learn in a much more structured way.

In the use of the design wiki, this has been largely successful and mirrors our previous work and that of others (Lindquist, 2006) However, it does require flexibility on the part of the tutors to interact digitally with the students outside of regular studio contact hours. With a small group this is manageable; with a larger group it may become problematic. Interaction between the students via the wiki will be encouraged more in the next run of this and we also intend to introduce an element of peer review of presentations, so that the student can build up a more complete picture of his development.

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