Trialling collaborative tools and processes for teaching graphic design at the University of Wollongong

Sarah Lambert
University of Wollongong, slambert@uow.edu.au

Marius Foley
University of Wollongong, marius.foley@rmit.edu.au

Publication Details
Trialling collaborative tools and processes for teaching graphic design at the University of Wollongong

Abstract
This paper reports on the work of the authors in developing online and face-to-face collaborative processes and tools for teaching graphic design and new media students. A modified teaching and learning model was trialed with approx 45 undergraduate students in the subject “DESN301 commercial practice” in session one of 2003. Significant components of the teaching and learning model trialed are: 1. Revised assessment centered on teams of four collaborating to produce a client project. 2. New resources to support individual learning. 3. New resources and online tools to support collaborative team learning. 4. Website as a doorway to tools and resources. We observed high levels of student engagement with the subject materials and the website right from the beginning of the session. Most of the students made regular online discussion postings, and worked at the project steadily across the session rather than engaging in a last minute frenzy. The high standard of completed creative projects, coupled with content analysis of online discussion postings provide evidence of good creative process throughout. The results of an online survey of the subject at end of the session support our plans to extend the experience over two consecutive sessions, allowing for familiarisation with tools and processes at 200 level before tackling commercial projects in this mode at 300 level. Due to the success of the trial we intend to continue our research, refine the model, develop more collaborative tools and roll out the program to other subjects and other creative disciplines within the Faculty of Creative Arts. This work is part of a 12 month project funded by the Educational Strategies Development Fund (ESDF) at the University of Wollongong.

Keywords
university, design, graphic, wollongong, teaching, trialling, processes, tools, collaborative

Disciplines
Arts and Humanities | Social and Behavioral Sciences

Publication Details

This conference paper is available at Research Online: http://ro.uow.edu.au/asdpapers/308
Trialling collaborative tools and processes for teaching graphic design at the University of Wollongong

Sarah Lambert
Learning Designer, Centre for Educational Development and Interactive Resources (CEDIR), University of Wollongong

Marius Foley
Lecturer, Faculty of Creative Arts, University of Wollongong

Abstract

This paper reports on the work of the authors in developing online and face-to-face collaborative processes and tools for teaching graphic design and new media students. A modified teaching and learning model was trialed with approx 45 undergraduate students in the subject "DESN301 Commercial Practice" in session one of 2003.

Significant components of the teaching and learning model trialed are:

1. Revised assessment centred on teams of four collaborating to produce a client project
2. New resources to support individual learning
3. New resources and online tools to support collaborative/team learning
4. Website as a doorway to tools and resources.

We observed high levels of student engagement with the subject materials and the website right from the beginning of the session. Most of the students made regular online discussion postings, and worked at the project steadily across the session rather than engaging in a last minute frenzy. The high standard of completed creative projects, coupled with content analysis of online discussion postings provide evidence of good creative process throughout. The results of an online survey of the subject at end of session support our plans to extend the experience over two consecutive sessions, allowing for familiarisation with tools and processes at 200 level before tackling commercial projects in this mode at 300 level.

Due to the success of the trial we intend to continue our research, refine the model, develop more collaborative tools and roll out the program to other subjects, and other creative disciplines within the Faculty of Creative Arts. This work is part of a 12 month project funded by the Educational Strategies Development Fund (ESDF) at the University of Wollongong.

Research context

Collaboration

Collaboration is an integral part of the contemporary design landscape (Gleeson, 1996). Designers, along with other creative practitioners – photographers, animators, musicians, writers and technicians – work closely to create print and multimedia.

As Baskin has noted, collaboration has the potential for many positive outcomes.

Groups accomplish tasks that cannot be done by the individual alone; they bring multiple perspectives to bear on a single problem; they capture the dynamic of real world complexity; they provide a vehicle for decision making and taking; and they impose an efficient means of organization control over individual behaviours. (Baskin, 2001).

As Schrage has noted in the context of the design industry, ‘...the new reality is that it will take the collaborative efforts of people with different skills to create innovative solutions and innovative products’ (Schrage, 1995).
Teaching collaborative design

For some time, teachers of graphic design have been aware that the teaching of generic skills such as design process and teamwork are important aims of design courses. For example, design students at the University of Lancashire were introduced to concepts such as: Working in Groups, Design by Doing, Design as a Process of Knowing, and Modelling the Design Process at a series of face-to-face conference days in 1996 (Gleeson, 1996). Since this time the educational environment has changed substantially with the rise of understanding of the benefits of flexible learning (Collis & Nikolova, 1998), and active learning in real-life work situations (Biggs, 1999). However, the need to integrate generic teamwork or collaborative skills has not gone away.

Rather than providing students with stand-alone courses in generic teamwork skills, the Faculty of Creative Arts at the University of Wollongong has given graphic design students the opportunity to practise these skills as part of their practical undergraduate design courses. Academics in the Faculty have observed that many of the students’ group work and general design skills would grow with each project-based assignment, echoing Biggs’ argument that deep learning is facilitated by students engaging in active learning (Biggs, 1999). Common groupwork problems were also noted, particularly an imbalance between skills and effort of the group members.

The challenge for these courses was to investigate how best to teach the fundamentals of collaboration – at the same time reflecting a design studio environment – within a design course. In particular, how could this be achieved in an assessment focussed environment where a student is dependent on the group for part of their final result.

Reingold refers to this as a ‘collective action dilemma’ (Reingold, 2002). In Reingold’s text a conversation with a Microsoft research analyst is represented that articulates the concept as: ‘the perpetual balancing of self interest and public good...(where) public good is a resource from which all may benefit, regardless of whether they helped create it’ (Reingold, 2002).

Online collaboration

In recent times the benefits of collaborative learning have been shown to extend to the online environment (Hron & Friedrich, 2003). As the medium documents group processes, the literature also shows that the online discussion forum can overcome the lack of transparency, which can blight collaboration in the face-to-face environment (Baskin, 2001). A teacher reading through the discussion threads can easily spot the student not pulling their weight, and those contributing frequently and well.

This raises the question of which tools and methods to employ. Unlike recently reported research into fully online collaboration (Baskin, 2001; McLoughlin, 2002), the context for our research is a blended teaching model – the students in our study have the opportunity to collaborate in both of face-to-face and online environments. The trial aims to maximise the benefits and reduce the negatives of both the collaborative learning model and the online environment.

Unlike other recently published work, this study also extends a general collaborative learning model into the ‘creative industries’ discipline, namely graphic design and new media students. The group process undertaken by the students in our study involves the creative process and creative problem solving in the realm of visual design – collaborative development of imagery as well as texts. The online tools support the face-to-face process.

Background to the trial

This trial has had two iterations to date. In 2001 a modified way of teaching Commercial Practice in Graphic Design was trialed by Marius Foley in the Faculty of Creative Arts. The trial focussed the students on teamwork-based work practices. The difference in this class to previous years’ was that the students were put into teams of four based on a range of their abilities, using a survey of their career intentions and previous results. They were also allocated defined roles that mirrored those in a conventional graphic design studio – art director, designer, production or traffic controller and client liaison.

It was hoped that allocating each of the four team members a role and defining/documenting those roles would provide adequate scaffolding to enable the students to actively engage in the collaborative process, and to get...
over the inertia and group formation problems noted by many researchers (Tuckman & Jensen, 1977; Maples, 1988; and Gersich, 1989).

The teams then worked on actual design jobs, sourced from a number of not-for-profit groups. Students were encouraged to produce a level of design work that was not expected in this sector. In other words to take the concept of ‘public good’ to their (not-for-profit) market.

So, the students were exposed to two experiences, which were, on the whole, new to them: working collaboratively in a team that was not based on existing friendships; and doing a real design job. This experience aimed to mirror typical design studio conditions. It was imperative to teach students how to work effectively in a design team while maintaining sound design objectives and enabling them to produce relatively large scale projects. As Schrage points out: ‘The thing that (these) collaborations have in common is people who realise that they can’t do it all by themselves...they accept and respect the fact that other perspectives can add value to their own’ (Schrage, 1995).

This inaugural class worked well, and demonstrated that it was desirable to pursue the idea further. A number of issues prompted the need for some modification and refinement to the program.

The experience and the feedback from the students provided valuable information on:

- the optimum number in a team,
- the need to be aware of students who were not performing for whatever reason
- assessment tasks to monitor the progress of the work
- online facilities to provide a structure to enhance the experience and to monitor student engagement with the project
- information on the defined roles, and, importantly
- information and techniques for working collaboratively.

In November 2002 an Educational Strategies Development Fund (ESDF) grant application was prepared in cooperation with Sarah Lambert, Learning Designer, of CEDIR. The requested funds were to be used to pay for teaching relief for the lecturer and covered the costs of the Learning Designer/Developer. The application process refined the scope of the project and defined how Learning Design expertise could support the educational aims and objectives of the project. The grant was successful, enabling both authors to commit three to four hours per week to the project.

**ESDF trial schedule**

Prior to session (March 2003) the Subject Outline was edited to reflect the introduction of a WebCT site¹ and the use of online discussions to supplement face-to-face classes. The group report assessment item which documents creative process was written so that students could make use of material posted in the online discussions. Next the WebCT site was set up, and basic tools added eg. calendar, subject outlines, faculty specific resources. In teaching week two the usability of collaborative tools in WebCT (discussion, chat, whiteboard, presentations) was tested with a few students. By about week four of session project groups were finalised, roles allocated and an online discussion and student presentation space was set up for each.

This is a different task design approach to some other teachers/researchers in the area who may not have defined task roles, but have instead tried to scaffold the learning by defining communication roles in the set up of the online discussion space, for example, setting up discussion topics like ‘organising meetings’, ‘feedback on progress’ (McLoughlin, 2002).

From this point on, just-in-time development was undertaken i.e. as new documents/resources were needed during session, they were written and posted to the WebCT discussion space. Prior to students submitting reports an assignment tool was set up on the WebCT site with the aim of allowing reports to be submitted digitally via the WebCT site.

¹ Teaching websites at UOW are powered by WebCT (commercial learning management system/software), therefore in this paper teaching websites are referred to as ‘WebCT sites’.
The WebCT site was monitored regularly during session, especially the student discussion space. Based on observations of student and website activity, discussions were ongoing to evaluate the teaching model and how it could be further developed and also applied to other subjects.

The authors undertook an informal tool comparison with Omnium developed by COFA, a process that is continuing. Project evaluation was also planned and deployed.

Figure 1: The homepage of the WebCT site

Components of the ESDF trial

Significant components of the teaching and learning model trialed are:

1. Revised assessment centred on teams of four collaborating to produce a client project. The assessment contains individual, group and process components:
   a. Individual – research report plus a personal response to the group project brief;
   b. Group – the creative project for the client, and
   c. Process – online discussion postings including posting graphics and feedback on the creative project, and meeting arrangements and outcomes.

2. Resources to support individual learning:
   a. Report template (individual report on project roles);
   b. Standardised feedback/marking sheets showing assessment criteria;
   c. URLs to useful websites, and
   d. Online assignment submission tool for individual report.

3. Resources and online tools to support collaborative/team learning:
   a. Roles in teams defined and documented
   b. Production flowchart explains process
   c. Project schedule template as Excel file
   d. WebCT discussion space, and
   e. Student presentation tool gives each group their own website.

4. Website as doorway to tools and resources.
Assessing the ESDF trial

An integrated evaluation plan was developed to assess the trial, which included both formal and informal evaluation. Informal elements were:

1. Weekly monitoring of the online discussion space by both academic (Foley) and developer (Lambert)
2. Observing student progress and learning during face-to-face class time, and
3. Feedback from clients about the students' work.

Plans for formal evaluation of the project were approved by the University's Office of Research Ethic Committee. Student permission was sought for these voluntary elements, which included:

1. Online survey of student experience, deployed at end of session
2. Content analysis of the student online discussion postings.

Outcomes of THE ESDF trial

Observed behaviour of student learning

The notion of collaborative work was something that interested the students. Despite their fears of having their assessments pulled down by poor performance of their team-mates, they were open to the new experience. It helped to have the assessment procedures set up to reassure them that there was an opportunity for an individual design response (worth 30% of the overall mark) that would lead into the team work, and that they could justify their own contribution to the team in another assessment task (worth 20%).

There was an immediate uptake of the new technology, that is, online discussion forum across the class, formally and informally, which suggested that the students were willing to engage with the technology and could appreciate it as a common, collaborative space. It was evident by regular visits to the discussion space that the sharing of ideas and images, and feedback on the shared items was happening, albeit at differing rates, in all the project groups. It was seen as a place where they could easily communicate, transfer files and track the progress of their teamwork.

Informally a number of student-initiated projects also sprang up alongside the class work. This was an encouraging sign that they were enthusiastic for the space. Schrage draws attention to this idea of the variety of 'shared spaces' which enable collaboration, from the 'formal collaboration which involves structures and processes (like meetings and new product reviews) and informal collaboration that involves instances and episodes (like scribbling on a napkin over lunch at the cafeteria)' (Schrage, 1995).

One of the most important pedagogical outcomes from the trial was that the students' work and their input into the site was consistent over the 13 weeks. This reduced the last minute frenzy that normally characterises student work and focussed the students' attention on the design process, not just the final outcome. In fact, a diagram of the various stages in the design process was available on the site so students could plot where they happened to be in relation to the overall process at any time.

Interestingly, the design outcomes were also of a high professional standard, evidenced by the feedback from clients. (Clients were asked to respond to the students' professionalism in their dealings with them and in the final product). See Appendix A for examples of student output.

Analysis of discussion postings

The discussion groups were set up to be a private space for the four team members of each project group. It was not possible for students to view postings to groups other than their own. Teacher and developer were able to see all postings however.
Student permission was granted to analyse postings from 6 out of 14 groups (N=518 or 61.8% of all postings.) Where not all group members gave their permission the data for the whole group was excluded from the analysis.

During the research period the University had a system/infrastructure failure which, disappointingly, resulted in a loss of WebCT discussion posting data. However, after this set-back the students wanted the discussion space to be set up again and most were able to re-post at least some individual work. Therefore postings analysed represent the discussion that occurred after this event, that is, the last six out of the 13 teaching weeks.

Preliminary data analysis is complete and a full report will be presented at the ASCILITE conference in December 2003. Below is a breakdown of the discussion postings analysed.

<table>
<thead>
<tr>
<th>Group</th>
<th>Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>121</td>
</tr>
<tr>
<td>2</td>
<td>46</td>
</tr>
<tr>
<td>3</td>
<td>196</td>
</tr>
<tr>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>6</td>
<td>102</td>
</tr>
</tbody>
</table>

Table 1: Breakdown of discussion postings analysed

The postings were coded according to the criteria listed in Table 2. The content analysis approach of coding postings using criteria which look at the message's primary purpose moves beyond simple quantitative means of investigation and seeks to investigate the quality of the learning that takes place in the students' online communications (Henri, 1992; McLoughlin, 2002). In this case, it was necessary for the researcher (Lambert) to write new criteria for data coding that was suitable to the structured, project-driven online collaboration undertaken by the students and therefore to the discussion postings to be coded (see Table 2).

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>provide or request information/material</td>
<td>Here’s some info on the new link (see attachment.)</td>
</tr>
<tr>
<td>2</td>
<td>general feedback</td>
<td>I’ll make those changes on the sitemap</td>
</tr>
<tr>
<td>3</td>
<td>reflective/analytical feedback (eg feedback plus own ideas)</td>
<td>I’m kinda liking the first one, with the 3D attempt. I don’t think... is as cool, cos the style is a bit childish... anyone else?</td>
</tr>
<tr>
<td>4</td>
<td>raise problems</td>
<td>Serious problem with the multi-session CD...</td>
</tr>
<tr>
<td>5</td>
<td>raise/provide problem solutions</td>
<td>Remembered a friend with a mac, should be OK</td>
</tr>
<tr>
<td>6</td>
<td>socialisation, group culture</td>
<td>Nice one bruva!! Good luck for the talk!</td>
</tr>
</tbody>
</table>

Table 2: How the postings were coded

As expected, each group analysed used the website primarily for sharing or requesting information or creative material, however, the variety of secondary uses was interesting. For some, each new topic stimulated much feedback - numerically more than twice the number of replies compared with new threads or topics. Other groups had half the number of replies/feedback compared to new postings/new topics.

Some groups used the online discussion space to raise problems, which were then discussed and solved in the face-to-face meetings. Other groups had members working more independently who would use the website to inform their team of their solution to a problem that they had encountered and solved in isolation. Some groups use of the online discussion space covered all possible collaborative tasks, and this activity seemed to mirror their face-to-face meetings. Other groups only undertook particular tasks in the face-to-face meetings, leaving other tasks for the online environment. In short, the website managed to support a range of group styles and
preferences, especially in terms of how the particular tasks were apportioned to the face-to-face versus the online environment.

To conclude, this data indicates that the students in the six groups engaged in good team process and good creative process throughout the study period. This data also indicates that in the context of a well structured collaborative project with well defined team roles, the online discussion space was able to provide flexibility in learning. Not only can students work when they want, and (if they have a computer at home or work) where they want, this data highlights the online discussion space's ability to support a range of preferred learning styles. These findings are in line with recently published research into fully online collaborative models and further research will help to determine which aspects of the communication patterns separate successful teams from unsuccessful ones (Baskin, 2001; Lea, Rogers & Postmes, 2002; McLoughlin, 2002).

### Online survey data

Students were asked to complete a voluntary online survey, which gave them an opportunity to give feedback on the two major issues in the class: the team based nature of the work and the online environment. 30% of students responded (N=16).

As is common for voluntary surveys, the 'middle ground' students tend not to participate and responses tended to either extreme, namely students thought they were highly valuable or, alternatively, unsatisfying. Students answered most positively to the statement ‘The group work and assignments were relevant to the subject matter taught’, ‘The group work and assignments in this course helped me prepare to work in the graphic design/new media industry’ and ‘Student discussions in WebCT environment enhanced my learning in this subject.’

When commenting on the most valuable aspects of the course, students noted:

'Making sure the people we have to work with actually work instead of a few people carrying the weight of the group'; and

'Gave us practice in working as part of a team of designers in a real life situation.'

A student unconvinced of the teamwork stated:

'I am not going for a job interview with myself and x number of other people – I am going on my own skills. Sure, being able to work in a group is important but this subject does not reflect the real world and hence is only a hindrance to study and developing my skills. If someone doesn't pull there(sic) weight in a real job they get fired – we can't do that here.'

Analysis of time spent by teaching staff online and face-to-face

A common, and justified, concern of teachers and developers when online course delivery is proposed is the impact on their workloads of the time required to construct the site, prepare the material, monitor the online activity and communicate with students. This is not to be underestimated.

The instructional designer/developer (Lambert) spent 70 hours on supporting this project March – July 2003. This represents approximately four hours support per week for 18 weeks (13 teaching weeks plus the break and two weeks before and after session.)

Given that this course was both face-to-face and online, the academic (Foley) decided to allocate the teaching time proportionally to each. In other words, one hour of each three-hour studio class was devoted to working online, and the lectures were focussed on providing relevant commercial and process material and getting team reports on the progress of their work. This mix allowed for part of the preparation time to go to uploading relevant documents.

As this was a final year class it was also expected that the students were self-directed and would be able to work unsupervised for part of their class.

However, while the day to day preparation and running of the class could be reasonably managed within existing class time, it should be said that there were occasions when extra time was required. It might be to deal with unforeseen, but fairly inevitable, technical issues (such as the failure of IT backup systems) or the need to respond to students between classes and the general administration of the site.
Future of the project

Due to the overall success of the trial to date it will now be taken forward. From July to November 2003 less structured team-based work and the online space will be introduced and trialed with second year students. The intention is to familiarise them with both before going into the 300 level experience.

Another aspect of the final part of the trial will be to introduce collaborative games such as Photoshop remixes and ‘exquisite corpses’ (experimental typography) to students in 100 and 200 level. This is aimed at collaborative visual ‘brainstorming’ to encourage collaborative creative process. It would be an unfortunate outcome to downplay the creative synergies possible with collaboration by depicting it as simply an educational or industry process.

Finally, it is intended that the trial be developed next year to include students from sound design and sculpture, using the Omnium software as the collaborative online space, (enabling a tool comparison between WebCT and Omnium). This will be contextualised within an Interaction Design model.

References


Appendix A - Examples of design output

Figure 1. Mosaic wallpanel for 'Backyards of the Illawarra Exhibition design

Figure 2. Website for Graduate School of Journalism, Faculty of Creative Arts
AUSTRALIAN YOUNG CHRISTIAN WORKERS
Website Style Guide

Figure 3. Website for YCW Australia, from the Style Guide

Figure 4. Website for Boxkite, Poetry Journal.