Where's my class? Using Web 2.0 for collaboration in a design environment

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This paper builds on the successful implementation of Web 2.0 technology in a first-year photography subject within a design education program. The success of the subject is now being expanded to create a dynamic, global classroom introducing students to international perspectives. This paper describes the setting up of a universal partnership and collaborative steps taken to design, develop and implement learning and assessment tasks. Logistical considerations of time zone, student numbers, year levels, existing curriculum and learning outcomes agreeable and paramount to all parties are explained. Setting the parameters to create a global classroom has demanded strict guidelines and planning to create an effective partnership. To achieve this, extensive communication and consensus between the teachers was required to establish a pedagogically sound learning environment.

Keywords: Web 2.0 technology, design education, global partnerships, feedback

Introduction

This project explores the viability and potential of a distributed, collaborative teaching partnership that has designed learning activities aimed at improving student outcomes. This paper reports on the development of a universal partnership to create distributed task-based learning in design education. The project incorporates cross-global curriculum design involving critiquing and analysis activities, supported by Web 2.0 technology. These activities are currently being tested in semester two 2009 (Australian Eastern Standard Time).

With today's worldwide connection, education and business are no longer restricted by locality. Informed by projects, such as the Global Design Class in University Strathclyde (Wodehouse, et al., 2008) the benefits of a global partnership became more apparent. The aim of the project is to expose students to a global community afforded by Web 2.0 technologies. Providing a global network early in their studies was viewed as an opportunity to enhance learning outcomes and broaden students' perspectives. We envisage that this could assist future development in multicultural and multinational environments, for study and work, creating anywhere, anytime collaborations. An evaluation of the project will determine transferability and growth to other design areas to create teams of designers from any discipline participating in global communities of practice.

Background

This paper builds on an implementation case study at Swinburne University of Technology, Australia involving the exploitation of Web 2.0 for teaching and learning in a design education photography subject. (D. Robbie & L. Zeeng, 2008; Diane Robbie & Lynette Zeeng, 2008) A new model of teaching was first introduced in 2007 and has been sustained for three years producing enthusiastic responses from teachers and students with effective learning outcomes. During this time there has been a rapid rate of change in new tools, features, functions and accessibility of Web 2.0 technologies appropriate for learning and teaching. As a consequence it has been essential to undertake rigorous, regular reviews and assessment of its viability for learning and teaching. As highlighted in the previous study, 'We know that we must continue to listen to our students and our colleagues and discover new opportunities and possibilities to enhance our teaching' (Diane Robbie & Lynette Zeeng, 2008 p. 8).

Although the learning and teaching spaces have remained a mixture of blended and social spaces, the learners have adapted to balancing independent and dependent modes of learning in the face-to-face and online environments. While the Web 2.0 technology, Flickr, and the Blackboard learning management system are still being used, additional supporting educational technologies have been introduced continuing to enhance what and how we teach. Bender & Vredevoogd (2006) agree that this combination of online and face-to-face interaction improves student learning outcomes, attendance and enriches the design studio experience.

The successful implementation of Web 2.0 in the first-year photography subject for image sharing, critique and peer interaction has augmented and improved student teacher interaction and the feedback process. Using Web 2.0 technology as the dynamic tool for engagement and interaction has garnered a model of teaching employing effective, immediate and responsive feedback for improved outcomes.

In late 2006 early 2007 the use of Web 2.0 was implemented to address the millennial student's educational, institutional, social and economic environment and the impacts these have on teaching practice and design education specifically. (Adams, 2008; D. Robbie & L. Zeeng, 2008; Diane Robbie & Lynette Zeeng, 2008) The case study, as presented at ASCILITE in 2008, discussed a model of teaching photography to first-year students in a student-centered blended learning environment, specifically using the Web 2.0 software Flickr. The proclivity of social interaction and engagement with Web 2.0 technologies by the students made the successful implementation of Flickr, for image sharing and peer review and critique educationally appropriate.

The affordances of Web 2.0 (Flickr) for teaching and learning in the design education context have:

- promoted sustainable practices;
- created a borderless classroom;
- enabled flexible time, place and space zones;
- facilitated opportunities for critique and analysis;
- encouraged self reflection;
- transformed the teaching and learning paradigm;
- maximized the visual capabilities of the web;
- worked within multicultural and multinational environments;
- linked students and teachers with world-wide knowledge; and
- supported dynamic interactive collaborations.

Richardson and Swan (2003), in their research on social presence in online learning environments and it's relationship to students' perception of learning and satisfaction with their teacher, found that 'social presence is correlated with student satisfaction, motivation and learning'(2003 p. 81). Our model has continued to integrate the social aspects of learning in the design, delivery and instruction of this subject.

Due to the rapidly changing status of Web 2.0 technologies, and the use of third party software, we were mindful of the need to continually review and evaluate the teaching methodology. Further change and improvement in the design and delivery of the subject was grounded by student feedback on teaching and student learning outcomes. Extensive student participation, engagement and the high quality of learning outcomes was encouraging. Additionally, teacher motivation and enthusiasm transitioned to collaborations with global partnerships and transferability to other disciplines.

The success of the original case study by Swinburne University has been instrumental in fostering a collaborative global partnership with three universities internationally. Results of presentations and publications of this case study have led to recognition in the international design education community. It has culminated in the introduction of a class-to-class collaboration with students at Rowan University in USA and an introduction to James Cook University.

Three way discussions have introduced global interactions within the current 'Photography in Communication Design' subject where students in classes from the three universities effectively resolve a brief, and review and analyse the outcomes using the Web 2.0 technology. This paper presents the three-stage rationale and implementation of Web 2.0 technology for a global learning and teaching community of practice. It includes the trial and development of a collaborative partnership giving a brief background on the three universities involved.

Stage 1 2007-2008

With the initial success of the subject at Swinburne University, for students studying Communication Design, it was extended to other design disciplines. At the International Conference on Learning in Chicago the authors initiated and tested the feasibility of a joint learning activity with Rowan University.

A successful pilot of one learning activity with Rowan University over a period of six weeks established a key link with external students. Using Flickr as the conduit for image sharing, peer-to-peer critique and discussion, students from both Swinburne University and Rowan University collaborated to create a global classroom, where they could review images, discuss ideas and provide feedback on each other's work. Teacher and student responses to the activity were very positive and encouraged the evolution and continuation of the partnership.

> We have been having good class discussions regarding your student's imagination. Most of the folks are really impressed at the quality, creativity, craftsmanship and ideas…. (Teacher Rowan University, 2008)
>
> we have had very informed class discussions on the diversity of photography which linked in beautifully with our class topic on genres. I think they have learned a lot by this shared experience (Sessional teacher Swinburne University, 2008)
>
> Cool,...I love the fine art ideas that they do (student Swinburne University,2008)
>
> its great to see work from other colleges especially from overseas, I think it helps us a lot (student Swinburne University, 2008)
>
> Its nice to compare and contrast all the photos and styles… I think it has helped me generate ideas ...(student Rowan University,2008)

Stage 2 Semester 1, 2009

Student evaluations of the photography subject at Swinburne, University during 2008 highlighted the following as benefits impacting on their learning outcomes:

- flexibility;
- accessibility;
- environmental sustainability;
- student-student and teacher-student feedback;
- peer review and critique;
- benchmarking against others; and
- critiquing with peers and teachers.

The authors extensive review of feedback on student learning (Black & Wiliam, 1998; Blair, Blythman, & Orr, 2007; Brinko, 1993; Ende, 1983; Hattie & Timperley, 2007; Dai Hounsell, 2007; D. Hounsell, McCune, Hounsell, & Litjens, 2008) has been influential in the design and delivery of learning activities and design outcomes in the subject's delivery in Semester 1, 2009. As evidenced by central university surveys, student evaluations emphasized the profound significance of learning being inspired by peer-to-peer and teacher-to-student feedback and critiquing. A series of scaffolded learning activities have since been developed and involve a variety of giving and receiving feedback mechanisms including verbal, written and recorded modes. A concentration of feedback on and for learning has resulted in significant positive student responses in the semester one 2009 centralised university feedback evaluations. Feedback has become a pivotal component to improved learning in this subject.

A presentation at the Photographic Image Educators Association (P.I.E.A.) in Sydney 2009, focusing on feedback and the global classroom as afforded by the Web 2.0 environment, lead to extending the collaboration to include James Cook University. Follow-up emails resulted in teachers from all three universities embarking on an initiative to create a specific task with all cohorts involved in reviewing and critiquing each others work. Learning from the trial task at Rowan University had proved the benefits of seeing all students work within a large cohort of students. Benchmarking with other universities with similar subjects but different curriculum content created opportunities to enhance the body of knowledge and improve visual analysis skills.

The partnership has generated lots of enthusiasm and interesting online discussions.

> I am excited to be included in this project and look forward to its continued evolution and success! (Teacher Rowan University,2009)
>
> I am really interested in following your Flickr teaching model for my subject so I am keen to get involved. (Teacher James Cook University, 2009)

The boundaries of the traditional classroom/studio model in a Communication Design program have now been extended beyond the originating university's face-to-face and online classes. The subject delivered previously now offers students national and international perspectives on photography in design education.

Stage 3 Semester 2, 2009

To create a collaborative project involving teachers from three different universities teaching students in three different design disciplines it was essential to review existing curriculum design, learning and teaching practice and assessment. This project set out to answer the following question *"Can distributed collaborative teaching partnerships design learning activities that improve student outcomes?'* A series of questions to ascertain differences and similarities at Swinburne, Rowan and James Cook Universities were distributed. All parties were asked to consider the following questions so that a suitable project, beneficial to student learning could be designed and implemented.

1. Are formal lectures given or is it all studio based learning?
2. How many hours per week is devoted to your subject?
3. How many students do you deal with on a weekly basis?
4. What year level do you teach?
5. Do they have fixed hours for studio access or is it any time access?
6. Do you have only local students or some from overseas/Canada?
7. How many years do your students study photography?
8. Do you set specific assignment?
9. Are there any group assignments?
10. Do they have lighting classes for particular assignments?
11. How do students hand in their final folios? Is it presentation or for a panel to review?
12. Do you have peer review and if so is it verbal or written?
13. How is feedback given on individual and final folio?
14. What photographic gear do they need to own and what photographic gear?
15. Does the University supply both on and off campus?
16. Is there ready access to computers for students or do they need their own?
17. What if any web 2.0 technologies are you using at present?
18. What other means of communication or technologies are employed?

Table 1 provides a summary of university and student demographics, in the three universities. A description of each university context, in response to the questions, follows Table1.

Table 1: Summary of universities

Swinburne University	Rowan University	James Cook University
Communication Design	Studio Art	Creative arts
Photography for Communication design	Digital Photography	Digital Imaging
1st Year	A mix of 2nd to 4th Year	All year levels
cf 200 students	cf 20 students	cf 100
One semester subject	One semester subject	Variable
Core subject	Elective	Core & elective
Students supply own cameras	Students own camera.	Supplied by university
Cameras overnight loan	Cameras available for loan	NA
Well equipped professional studios and computer labs in all universities but access varies		

Swinburne University Victoria, Australia

Photography has always been an integral part of the Communication Design course at Swinburne University. With a new curriculum implemented four years ago it became a compulsory subject for all 1st year students for one semester. At present there are no other photographic classes but in 2010 an advanced studio class will be introduced for 2nd and 3rd year students. Over the past three years photography has been supported by the use of Web 2.00 technology, a freely available third party social networking software.

Students attend a one hour lecture then a two hour studio/tutorial class. The student number can vary from 100 -250 depending on the semester. There is a high percentage of overseas students, (approximately 20%), mainly from South East Asia but also from South America and Europe.

In the tutorials held in the studio area, students are instructed in the basic elements of photography. Practical application of the technical knowledge through class exercises, expectations of the set weekly tasks are explained and examples of best practice are discussed. All tasks have strict guidelines and outcomes must be given an individualised approach. Emphasis is placed on lighting initially on location then adapted to studio. There are some group assignments undertaken in the studio after students have been trained in basic photographic techniques. First-year students do not have any access to the studio area other than in these tutorials.

All tasks are submitted online through Flickr with final assessment in the form of a hardcopy incorporating learned skills from other communication design subjects. These may include illustration, scaling, sizing, and typography plus the use of software such as Illustrator and Photoshop. Feedback is given in a variety of ways throughout the semester with emphasis on it being immediate, timely, on performance and areas for improvement or change. Peer-to-peer and teacher-to-student feedback is given online as well as face-to-face in studio/tutorial classes. A variety of educational technologies are used including Blackboard, Flickr, Skype, video and audio.

Rowan University, New Jersey, USA

In the Department of Art where the photography area is located, fine art majors take a variety of subjects. In each photography subject, students receive formal lectures and undertake studio work. Classes meet twice a week for three hours each and the curriculum is balanced between the two approaches (lecture/studio). Depending on the topic, one meeting might be all lecture and the other all studio or class time might combine both. Each class has a maximum of 15 students due to a finite number of studio spaces and equipment.

There are prerequisites for the advanced subjects, however, all year levels might be present in a given class depending on what subjects students undertake. On average, the beginning subjects have mostly 1st and 2nd year students while upper level subjects have 3rd and 4th year students. Art major students can access the studios anytime there is a technician on duty.

The majority of Art majors students (60%) are from the local region with a small percentage (5%) out of state and international students. The department offers a BA or BFA in Studio Art so, there are no true majors. The department is in the process of expanding and developing more specific majors and expects to have an interdisciplinary MFA and more major based programs within the next 5 years.

The curriculum is assignment driven, however, depending on the subject a genre or theme might be the dominant topic. Likewise, in the advanced classes some students can elect to work on a specific project, genre or theme throughout the term. Individual assignments are most common, however, depending on the topic, small group collaborative projects are implemented frequently. Students are evaluated on individual assignments and the project/genre they are working on. Informal group critique is the fundamental means of assessment and each class meeting will involve a "progress" discussion either on an individual basis or as a group.

The final evaluation is a group critique, however, students can meet individually with the teacher if so desired. This process also depends on how the work is progressing and what problem the student is working on. Feedback and assessments given by the teacher are generally verbal with a follow up in writing. Students are required to write review papers each term on their choice of subject (in the arts) or

substitute those with an ongoing journal (or blog), a presentation on an artist or artists or a book (blurb.com, lulu.com).

Current technologies in use are image sharing and storage tools, social networking applications, learning management systems, web based communication tools, electronic portfolio tools and web based content delivery applications. The department is always investigating emerging and current technologies for implementation into the learning environment.

James Cook University, Queensland, Australia

After a major reconstruction of the course three years ago, James Cook University now offer only one award, Bachelor of New media Arts, encompassing major and minor areas of study, including Digital Imaging. This approach centers on a number of core subjects common to all creative arts students at each year level. These core subjects offer insights and engagements that are universal to the contemporary creative practitioner and are balanced against a range of discipline specific subjects from within the school and electives from across the university. All current offerings of the school are centered on new and next technologies; a move that continues to be well resourced.

Lectures of 50 minutes are given in all digital imaging / photographic subjects and are always accompanied by tutorial, seminar, studio workshop or computer lab practical, usually of 1 hour and 50 minutes duration. Total class time in every subject is 39 hours per subject per semester. If students in the Bachelor of New Media Arts choose to major in Digital Imaging they will spend three years completing a total of eight photographic subjects. There is approx 100 enrolled in Digital Imaging at various levels. Following the restructure of the school, international enrolments have declined significantly. However this year there has been a return with students enrolling from the USA and Scandinavia.

Most subjects have set assignments with a folio component that allows students to develop an individual creative direction. Other subjects, especially at third year level are portfolio based with a negotiated set of outcomes. Group work is central to our mission, however most group work activity (not all) takes place within the core subjects. This activity might involve wiki development, performative tasks, seminar presentations and cross disciplinary problem solving.

Where the class size allows it, peer discussion / review is a common feature of tutorials. Some peer assessment is done in student groups. Feedback varies amongst staff and is currently under review as numbers are rapidly increasing. Sometimes it will be an audio recording of comments coupled with a rubric.

Final folios are handed in to the general office where they are time stamp receipted. Copies of all digital files are placed on a secure subject server. Where the folio is only one of several assessment items within a subject it will be marked by the lecturer alone. However where it is the principle or sole assessment task it will be panel reviewed.

Very extensive use is made of the customised version of Blackboard and includes wiki, chat, blog, discussion board etc. Some staff use Skype, Ning, Facebook and a variety of other Web 2.0 technologies in delivery, assessment and as a collaborative workspace.

Implementation of a collaborative partnership

Employing a collaborative approach to the learning design, the activities, assessment criteria and teaching strategies, have been modified. Supported by the Web 2.0 technologies, learning and teaching spaces and places have been aligned with curriculum from each of the three universities.

The new iteration for Semester 2 has incorporated:

- local, national and international students and teachers;
- small and large groups of students;
- multiple program level enrollments;
- Communication design, Fine arts and Creative arts curriculum;
- scaffolded learning activities; and
- timely and effective feedback to global cohorts.

To support the design process the teachers at each university used Skype and email as the main means of communication. Early experiences in the process highlighted some initial technological problem solving, time zone management and institutional variances. Bohemia E., Lauche K., & Karman K. (2008) discuss similar challenges of organising a global studio. These issues have provided early consideration for students commencing collaborative learning activities.

A project was proposed where students from the three universities undertake a learning activity that incorporates the diversity of learning streams within the cohort of students. The underlying imperative was to maintain a quality of teaching and learning that benefits all participants and meets the needs of all curricula.

This Web 2.0 based collaborative activity allows students to work independently yet share knowledge and appreciation of the image. Each participating student is required to maintain images in a shared site and analyse and critique a specific number of images, individually and as a part of a group. Each University sets aside regular class time to review the images, compare work styles and discuss critique and analysis given. Teachers have facilitated the process guiding and appraising discussions. Completion of the activity will be a virtual exhibition available using the Web 2.0 technology Flickr. All students view and critique the final exhibition nominating the most outstanding set of images for a gallery of best practices thus making this a truly global community of practice.

The future of global partnerships…

How will we know if this is an effective community of practice and a truly global classroom? Throughout this partnership all teachers involved have reflected and evaluated on the collaborative process and identified strengths, weaknesses and areas for change or improvement. An evaluation of the learning activity asks all students to contribute to a short discussion forum on the effectiveness of the set tasks on their learning, camera and lighting technique, and critical and analytical thinking skills. A formal evaluation of the global learning activity's implementation will be conducted on completion of the initial activity at the end of semester two 2009. Analysis of this evaluation will assist in the review and redesign for further iterations in 2010 and transferability to other disciplines and student cohorts.

Future global design education projects will be considered based on teacher and student reflection, evaluation and feedback. Preparing our students to succeed in a global community, afforded by Web 2.0 technologies for collaboration, has aimed to extend their specific discipline expertise in the broader design profession. We view this as the beginning of future collaborations where students and teachers are capable of working with anyone, anywhere and at anytime.

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Please cite as: Zeeng, L., Robbie, D., Adams, K.M., & Hutchison, C. (2009). Where's my class? Using Web 2.0 for collaboration in a design environment. In *Same places, different spaces. Proceedings ascilite Auckland 2009*. https://doi.org/10.14742/apubs.2009.2159