Engaging Student Social Networks to Motivate Learning: Capturing, Analysing and Critiquing the Visual Image

Diane Robbie, Swinburne University of Technology, Victoria, AUSTRALIA
Lynette Zeeng, Swinburne University of Technology, Victoria, AUSTRALIA

Abstract: This paper discusses how a unique, innovative and effective model of student-centred learning has been implemented through an educational experience that directly captures students' enthusiasm using Web 2.0 technologies. This model has allowed students to collaborate and share in the process of creating and building their photographic knowledge in an online social network through conversations about their images. The active learning teaching methodology adopted takes into account the digital technology age, the digital camera and the digital student. Meeting the needs of students by using an emerging social technology has engendered a spirit that has even the reluctant and less creative students immersing themselves in creative, photographic skills. The dynamic nature of Web 2.0 technologies enables regular and immediate feedback between students and teachers. Through interactive peer learning, students are motivated to reflect, analyse and critique their own work, and the work of their peers more frequently, establishing a practice of visual literacy skills including image capture and editing techniques. Students can explore the camera, develop photographic, analytical and critiquing skills, and reflect on their work in their own time. This mode of learning enhances student work life balance, allowing flexible study activities and eliminating printing costs.

Keywords: Web 2.0 Technology, Social Networks, Blended Learning, Photography, Active Learning, Peer Learning, Student-Centred, Visual Literacy

Introduction

DURING THIS DECADE there has been phenomenal growth in freely available Web 2.0 technologies, including some of the more popular ones such as YouTube, My Space, FaceBook, Flickr and Webblogs. These technologies incorporate communication features connecting networks of communities for social and informational activities. The enormous popularity of these expeditiously evolving and influential sources encouraged the authors to explore their potential for learning and teaching in a first-year photography unit, within a tertiary design faculty. We felt that the ubiquitous nature of social network sites make them ideal for today's youth, who consistently spend time using them to access their public life.

A fundamental change produced by the digital world has been a shift in the way we produce and share ideas, and exchange knowledge. In the education sector it is now possible for learners and teachers to collaborate, both locally and globally, in the digital environment. Groups and individuals are connected in a range of ways and are able to contribute to common projects. While the motivating factors are variable, they contribute to and augment the respective beliefs, ideas and knowledge of the participating students in different ways. These new patterns of how we interact in these communities, for the social production and distribution of knowledge, contain affordances that facilitate social interactions and innovative approaches to teaching and learning experiences. (Benkler, 2006; Britez, 2007; Burbules, 2006). It was this opportunity for innovation that encouraged us to explore the potential of Web 2.0 technologies.

The implementation of social software technologies for teaching and learning in the university setting is still in its infancy. Social software is championed by our modern youth for social interactions, but in terms of pedagogy there may be limitations. We believe that when used in a blended model in a constructivist paradigm, (Brooks & Brooks, 1993; Dewey, 1966; Jonassen, 1999; Vygotsky, 1978) which incorporates social interaction, engagement, knowledge sharing and learning as a conversation (Laurillard, 2002), Web 2.0 technologies can be very effective as a learning tool, as this case study describes.

Building on the premise that social software "*...enables people to rendezvous, connect or collaborate through computer mediated discussion and to form online communities…" (Wikipedia, December 2006),* this undergraduate unit has been designed and delivered to capture the motivations of young adults who are known to be responsive to digital technologies.

In this paper we describe the implementation of one form of Web 2.0 technology in an introduction

to photography subject, within a tertiary design faculty, and discuss the results of the implementation, providing insight into common user behaviours and effectiveness in a first-year university unit. Early results and feedback from students and teachers suggest that this application has facilitated student achievements of the set learning objectives and provided students with a foundation for lifelong learning skills. Additional benefits not previously evidenced in prior deliveries of this unit are also discussed.

Background

Teaching Fundamental Photography

Teaching fundamental photography is about being able to "see" and use a camera creatively and to think beyond the square, i.e. recreating the 3d world in 2d space. None of this has changed, as we still need to teach how to be more creative and analytical when taking an image, but the digital environment now needs to be considered in the delivery of the unit.

In previous years students had regular assignments to complete in relation to the learning objectives. Each assignment required students to absorb their own film processing and/or printing costs. These would become a financial burdon if images submitted required additional editing. At the end of each semester students then handed in a portfolio of work with proofs of all the images they had taken.

Teaching design students also necessitates wider knowledge of photographic application than is usually required. Students need to know where and how the photograph may be used in a design brief, rather than just as a straight exhibition photograph. Scaling and proportion ratio, and how a 35mm photograph (oblong) can be applied to a square format book, become important teaching points.

Photography in Communication Design

This subject aims to introduce students to the application and use of photography in design through the creative use of camera controls and techniques. It aims to generate an understanding of the symbiotic relationship between the photographic image and other design skills, and develop an understanding of digital practice, which includes resolution, colour, contrast, and image manipulation. Many amateur photographers shoot horizontally at eye height and middle distance. As a photographic educator, improving this practice is essential, so that students learn to make more creative use of camera controls, colour and composition.

The learning objectives in this unit are:

- to use camera controls creatively to execute a photographic outcome;
- to explore principles of lighting and apply techniques to personal applications;
- to explore space, tension and dynamics through compositional exploration and the role of the photographic image, to create abstracted, constructed, fabricated and factual visual messages;
- to explore digital cameras and other capture devices for photographic image making; and
- to employ editing techniques and analytical analysis of the photographic image.

Motivations for Introducing a New Teaching Model

With the introduction of digital capture and the emergence of the digitally aware student, it was necessary to address new and innovative ways of teaching, that maintained student engagement and achieved set learning objectives. In teaching photography, it is important to acknowledge that the digital age has created indiscriminate and unlimited shooting of images, without thought of the aesthetic elements, with most students using digital cameras and mobiles phones to capture images.

Most students use their mobile phones, SMS texting, Facebook or MySpace as social networks. The premise for using Web 2.0 technologies to teach photography was to exploit this method of communication and create an educational environment that would encourage learning by using students' preferred methods of communication.

Teaching the basic technical skills, as well as critical and analytical appreciation of the image, is paramount to good photographic practice. This model has incorporated student engagement in social technologies, to facilitate a flexible, student-centred learning environment. In order to do this, the conventional way of teaching photography was fundamentally changed to embrace the use of Web 2.0 technologies.

Methodology

Why Web 2.0 Technologies?

First-year students' learning experiences prior to coming to university are often characterised by teaching environments that focus on encouragement, support, and supervision. In contemporary higher education, students are required to be more self-directed and responsible for their own learning. Teachers therefore need to adopt active learning strategies that enhance the traditional face-to-face learning. Blended learning is an approach that supports active learning with the use of educational technologies.(Arnold & Ryan, 2003; Dziubab, Hartman, &

Moskal, 2004; Graham, 2006; Prendergast, 2004) 'Maximising success in a blended learning initiative requires a planned and well-supported approach that includes a theory-based instructional model, high quality faculty development, course development assistance, learner support, an ongoing formative and summative assessment' (Dziubab et al., 2004 p. 3)

Flickr© was the Web 2.0 technology chosen to facilitate this blended learning pedagogy. It was the most visually oriented of all social networks investigated for new approaches to the teaching of photography in the digital age. It offered the students a facility to critique and analyse their own and others images, and had a capacity for further discussion that extended the curriculum and conversations beyond the classroom. It was perceived that it might empower more reticent students, who lacked confidence to display their creativity in a classroom. Additionally it provided capacity for translation into several languages, benefitting the high proportion of international students.

Flickr Features

Table (1) highlights features of the Web 2.0 technology, Flickr, which supported concepts instrumental in teaching photography, and were also valuable in addressing the complex lives (work/life/study balance) of students in the digital age and their convergence with the digital camera.

Table 1: Teaching Approaches Supported by Web 2.0 Technology, Flickr

Teaching the Digital Student	**What Flickr Web 2.0 Technology Provided**
strong visual orientation	sharing of uploaded images restricts amount of images, eliminating ill-considered image production tags images, giving the teachers and students direct access to categories metadata in the shooting process provides information on image quantity, quality and time of uploading
active learning and student-centredness	opportunities for peer learning ability to critique and analyse others and self interaction between students ownership of discussion forums new topics can be posted or added to by anyone within the group private and public communication
engaging and supporting students	use of social networks commenting on any photograph by student and teachers confidence through online voice for more reticent students availability of 6 languages supported international students constant and costly need for printing eliminated
flexibility	anytime, anywhere access convenience without being restricted to timetabled class times. immediacy of feedback
sense of community	accounts created within a private teaching space student profiles showing name & portrait identity not anonymity interaction across whole student cohort

Implementation

The implementation of this Web 2.0 technology, underpinned by a blended model endorsing active learning methodology, focused on improving and enhancing learning outcomes, while meeting the educational needs of the student cohort. To get the most benefit from this teaching method and engage students from the outset, strict guidelines and specific instructions were developed for weekly learning tasks, involving taking photographic images using their own cameras, as well as criteria for critiquing students work, and clear assessment. Progressive formative feedback was provided through peer and teacher feedback online and during class reviews. To support the improvement of students' camera skills, techniques and image editing, opportunities for further discussion were encouraged. The students' development was reflected in a series of images submitted for final assessment at the end of the semester.

Student Learning Activities

Students were expected to attend a weekly 1-hour lecture and a 2-hour studio class. Information was disseminated reflecting the units' learning objectives and learning activities, and tasks and assignments were explained with clear evidence of requirements. Practical demonstrations on camera use and lighting, and looking at work on the Flickr site for class discussion and peer critiquing, formed part of these sessions.

Learning tasks were scaffolded on a weekly basis, building on photographic concepts discussed and practised during studio sessions. Students' work was submitted and displayed online for personal analysis and peer-to-peer critique. Students were encouraged to write brief critiques on a variety of images (a minimum of 3 per week and not just the ones they liked), and make informed observations or constructive criticism, based on what they had learned about creative photography.

At the conclusion of the semester all students were expected to have posted a minimum of 100 images and made 33 comments on other students' work. Being design students, they were asked to consider design skills taught in other classes, the application of photography in relation to other medium, and design principles. Other elements of design had to be considered in the creation of their own photographs.

Teaching Approach

Well planned teaching sessions and learning activities with explicit guidelines were required, in order to make the interactions and engagement with the lectures, studios and online activities work successfully. Initially students were guided in getting started, both with their cameras and setting up online sites. Studio time was used to review and discuss students' images, critiques and implement further photographic skills. As weekly tasks were completed, the teachers reviewed and commented on students' work from a technical and creative viewpoint. The teachers contributed to student-generated discussion forums and communicated personally by private email as needed. By the end of semester the teachers had commented on the work of every student in studio classes and online. Not only did weekly critiquing by teachers and students provide immediate feedback, but it also assisted in keeping track of student performance.

Student Evaluation and Feedback

Throughout the semester anecdotal feedback was encouraged, during class and in online discussions, on student likes, dislikes and progress in the unit. At the end of the semester students were asked to reflect on their learning experience and provide formal feedback via an online survey.

Feedback indicated that students felt that the process of viewing and reviewing images, and receiving and making comments, had improved their learning. Students suggested that this approach had raised their skill level of critiquing and analysing images and supported them in making better use of the cameras tools.

Survey Analysis

The online survey, with likert scale and open-ended response questions, was distributed via email and online to all 140 students enrolled in the unit. 34% of students responded and completed the survey. Statistical analysis of the survey in Table (2) highlights how and why this pedagogical approach had improved students learning.

Table 2: Responses of Agreement or Strong Agreement to Online Survey Questions

93%	liked using the Web 2.0 technology
97%	liked getting feedback online
85%	liked collaborating with peers
75%	critiquing assisted their learning
96%	photographic skills had improved
98%	confidence in taking photos had improved
98%	able to use the camera more creatively
95%	become more critical and analytical

Open ended responses to the survey questions indicate that using Web 2.0 technologies to support learning had provided students with:

- the ability to view a wider range of work, with access to a wider audience;

I am always curious to see the vareity of work being produced in Comm Design, but there are rarely opportunities to see pieces. From other people's ideas, thoughts, and criticisms I have beeen able to consider more in photography than I would've alone or by chance.

- intrinsic and extrinsic motivations;

The structure of this unit - combination of class time, lecture & flickr - really appeals to me. Flickr has kept me motivated. Having never done any photography before, the weekly feedback has built up my confidence to give tasks a real good go with out being intimidated.

Cost effective and easy to use.. also a great way see everyone's work at your leisure (esp as there is more than one photography class) as well as an excellent tool to give and receive some useful constructive criticism. For me i have been able to see some amazing techniques explored which i would never have known existed before this class...also the discussion part is also a great tool for recommending sites, equipment etc.

It is time and cost effective. I think its great how we don't have to develop the photos, as this would be so time consuming and expensive.

- regular and immediate feedback;

I really struggle with photography as a discipline but I have found the ease of working on an online interface to be extremely beneficial, especially when I receive (very) constructive criticism. I am learning lots and hope to (one day) take a half decent photo :P

- a comfortable, safe and personal learning environment;

I've really found flickr to be a useful teaching method, as the ability to upload, review and comment on other peoples work allows for quick responses and learning. I find that this actually pushes my creativity further, as there is the chance to go back and improve upon your style each week .

I think it is good to post our photo on flickr. It's easy and comfortable to use. I can see the other student's works at any time. The comment is very useful for me to improve.

- collaboration and sharing opportunities;

I think it is a good method of sharing photos. It is nice to compare and contrast all the photos and styles of the groups. I think it has helped me generate ideas so far if I've been stuck.

flickr is great, how else would we ever get to see everyone's photos like this, very useful, comments are handy,

- flexibility;

I've studied photography at another uni before and the method involved sitting through 3hr workshops looking at other people's images - using flickr is about a billion times more effective in that you can go through images at your own pace and receive decent feedback that doesn't rely on a bleary-eye set of class mates.

i think its a good way of making everyone's work accessible. the comments are constructive and by looking at other peoples work you get a better understanding of what is expected from you.

i love that we can upload/comment in our own time which sort of gives you breathing space... and saving money (not to mention not having to deal with printer malfunctions) helps

Discussion

This innovation focused on ensuring appropriateness to teaching photography in a higher education context. Paramount to this was maintaining authenticity of context and creating opportunities for peer learning, through critique and active engagement in photo publishing.

Results of this first iteration of teaching using Web 2.0 technologies have highlighted the relevance of reviewing the way we teach our new generation of students and the importance of embracing the learning needs of students who are actively engaged in the digital environment. As (Owen, Grant, Sayers, & Facer, 2006 p.5) say, 'it is the combination of the technology affordances of social software, with new educational agendas and priorities, that offers the potential for radical and transformational shifts in educational practice' (2006 p.5).

Using the social software as a tool to facilitate the critiquing process has proved to be an excellent mechanism. Blair, Blythman, & Orr explain, 'The crit is a powerful pedagogic tool that can facilitate participatory learning'(Blair, Blythman, & Orr, 2007), so when used in the design context, critiques provide valuable informal, qualitative and formative feedback, as well as opportunity to benchmark and learn from others, develop critical awareness and promote critical reflection. Web 2.0 technology

provided a platform for a critical community of practice, and this 'is a community in which we can trust the judgement of others, a community where there is no fear about presenting ideas' (Owen et al., 2006 p. 36).

This initiative has extended the blended learning pedagogy and engaged the students in a model of contextualised, social and situated learning, by drawing on design principles communicated in other units of study (Lave & Wenger, 1990). Learning in this unit has been enhanced by extending the traditional boundaries of the classroom and immersing the students in both face-to-face and online learning experiences. The teachers have provided learning experiences where assessment is aligned with the curriculum, encouraging 'multiple perspectives and social interaction to create knowledge, and enable students to have ownership of their own learning' (Chen, 2007) and (Lane, 2007).

The implementation has inspired the adoption of new approaches to teaching that have facilitated the design of a learning environment that challenges students thinking and recognises individual mental models in making meaning through interaction. Meeting the needs of the digital higher education student and enhancing their educational opportunities, has created a learning environment that:

- provides a portable space where work commenced in the classroom can be seamlessly extended beyond the classroom walls;
- encourages individuals voice and sharing;
- is personal, collaborative and situated on and offline;
- promotes social interactivity,
- is real-time working environment connectivity to learning communities (Lave & Wenger, 1990; Wenger, 1998);
- is affordable, accessible, equitable, seamless learning; and
- inspires lifelong learning.

Incorporating a Web 2.0 technology into the students learning experience has begun to meet the needs of a globally diverse student body. As work, study, social and economic factors impact on students' attendance on campus, reconsidering the instruction and delivery of teaching units is paramount. A reassessment of how to impart photographic knowledge and design effective learning activities in order to develop visual literacy skills has been enabled. This model of teaching has been transformative in changing the role of student to one of more active learner, while at the same time encouraging life-long learning. It has also shifted the teacher role to one of facilitator and designer of relevant and authentic learning experiences.

Outcomes and Perceived Benefits for Learning and Teaching

Many of the functions and features in this innovative approach have afforded activities that generate learning. The ability to see all the images and have access to all group members, rather than smaller class groups, aided the learning potential of the cohort of students using the site and allowed for better understanding and broadening of photographic concepts in a design context.

Peer-to-peer and student-teacher interaction provided immediate clarification of requirements or response to questions relating to their camera technique or image aesthetic, in a non-threatening environment. The comments function was highly beneficial for students who were able to learn considerably from their peers, through critiquing and commenting on each other's photographs. Appropriate language in lectures and classes, relating to technique, depth of field, movement and composition, were modelled by the teacher as guidelines for constructive feedback, in order to eliminate statements such as "that's nice" or "I don't like it". Examples included:

> *'I love the depth of field and colour in this photo, the glow from the sunset and how the sky cools from above';*
> *' very good use of light and shade creates perspective and intrigue as to what is at the end of the tunnel';*
> *'flare in this image detracts from the cityscape, you need to cup your hand above the lens to improve this';*
> *'fantastic use of light. Very strong compositionally' and 'this shot is too busy try cropping'.*

Limitations of size and number assisted student understanding of resolution and file sizes. Students were forced to reflect more deeply on their images, through their processes of editing and analysis, prior to uploading them for feedback or assessment.

The metadata function, giving information on when an image was shot and uploaded, the type of camera used, and data on camera settings, was vital to understanding photography. The metadata function helped the teacher and students determine how or why an image could be improved or if it worked or didn't work. If other students liked the image they were able to establish how certain effects were achieved.

The discussion forums extended the curriculum by allowing students to elaborate on class discussions and initiate new and diverse topics. Communication was encouraged and students gained confidence in sharing and discussing photography.

Additional benefits were economic and environmental, with no need to use chemicals for film or inks and paper for printing.

A paper on the use of social networks and the implementation of such technology in the classroom would be incomplete without reference to the digital divide. This term has been used to describe the prevalence of technological stratification between those with affordable and effective computer technology and those without. It also encompasses the gap between those who have technological ability and those who do not. Whilst it was evident that there was not a single student in the classroom without access to broadband when this new model was introduced, there was a marked difference in levels of skill when it came to setting up online sites for each individual student. As teachers we believe that we need to be aware that some students may be less technologically equipped than others. To counteract this we encouraged students to support each other, seek help through emails, and raise questions and issues in the online discussion forums.

Conclusion

We believe the delivery of this unit demonstrates genuine understanding of today's students who 'think and process information fundamentally differently from their predecessors' (M. Prensky 2001). It employs a blended learning approach using modes of delivery that we have carefully selected and adapted to meet the needs of first year design students, who are predominately digitally competent when it comes to mobile phones, digital cameras and technologies they use in their everyday social life e.g. Facebook, YouTube and MySpace. By developing a program that communicates in the language and style of the students we have:

- encouraged student engagement and belonging in the online photography community through activities that promote peer learning and group interaction;
- motivated students through structured skill development with regular and timely feedback;
- enabled students to interact with teachers and peers in a medium that has fostered enthusiasm for learning and teaching, enabling effective and appropriate peer review and critique;
- promoted online and face-to-face sharing and critiquing of work that has motivated students to be active participants;
- provided clear and explicit expectations and guidelines for accessing and working online; and
- modelled and managed appropriate feedback and set criteria for commenting and reviewing students' work.

> *I think it's a great system! we get to look at everyone elses photos to inspire us and critiquing each others work (although difficult at times) is really good for my own development because i then look for those things in my own photos. and i've found flickr really easy to use i'd never been using my camera to the full potential before and the way the subjects been taught has helped me emmensely*

In the delivery of this unit, the introduction of the online component has addressed the needs of our current, often digitally active, student population who are time poor with work commitments and travel constraints. The approach adopted has provided 'ease of access, flexible learning and teaching strategies and enhanced educational opportunities', (Rovai, Ponton, Wighting, & Baker, 2007) in (Cuthrell & Lyon, 2007 p.358) as well as creating improved learning outcomes for all students.

References

Arnold, R., & Ryan, M. (2003). *The Transformative Capacity of New Learning*. Melbourne: Australian Council of Deans of Education.

Benkler, Y. (2006). *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. London: Yale University Press.

Blair, B., Blythman, M., & Orr, S. (2007). *Critiquing the Crit*: The Higher Education Academy

Britez, R. (2007). Communication and Virtual Communities: The ethics and constraints of communities in virtual communities. *The International Journal of Learning,* 14(2).

Brooks, J. G., & Brooks, M. G. (1993). *In Search of Understanding: The Case for Constructivist Classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development.

Burbules, N. (2006). *Self-Educating Communities: Collaboration and Learning through the Internet* (Vol. 249). New York: Peter Lang Publishing.

Chen, S.-J. (2007). Instructional Design Strategies for Intensive Online Courses: An Objectivist-Constructivist Blended Approach , Vol 6, No 1, Spring 2007, pp. 72-86. http://www.ncolr.org/jiol/issues/showissue.cfm?volID=6&IssueID *Journal of Interactive Online Learning,* 6(1), 72-86.

Cuthrell, K., & Lyon, A. (2007). Instructional Strategies: What do Online Students Prefer? *MERLOT Journal of Online Learning and Teaching,* 3(4), 357-362.

Dewey, J. (1966). *Democracy & Education*. New York: Free Press.

Dziubab, C., Hartman, J. L., & Moskal, P. D. (2004). Blended Learning *Educause: Centre for Applied Research*(7).

Graham, C. R. (2006). *Blended learning Systems: Definition, Current Trends, and Future Directions*. San Francisco: Pfeiffer.

Jonassen, D. H. (1999). *Designing constructivist learning environments* (Vol. 22). Mahwah, New Jersey: Lawrence Erlbaum Associates.

Laurillard, D. (2002). *Rethinking University Teaching: A Framework for the Effective Use of Educational Technology* (2 ed.). London: RoutledgeFalmer.

Lave, J., & Wenger, E. (1990). *Situated Learning: Legitimate Peripheral Participation*. Cambridge, UK: Cambridge University Press.

Owen, M., Grant, L., Sayers, S., & Facer, K. (2006). *Social software and learning*. Bristol, UK: Futurelab

Prendergast, G. (2004). Blended Collaborative Learning: Online Teaching of Online Educators [Electronic Version]. *Global Educator*,

Rovai, A., Ponton, M., Wighting, M., & Baker, J. (2007). A comparative analysis of student motivation in traditional classroom and e-learning community. *International Journal on E-Learning,* 6(3), 413-432.

Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes.* Cambridge, MA: Harvard University Press.

Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.

About the Authors

Diane Robbie

Diane's current role as Academic Development Advisor for the Faculty of Design includes developing curriculum that provides creative, flexible, student-centred learning environments employing teaching approaches that promote peer learning and group collaboration. Her research interests include the appropriate uses and implementation of communication technologies in teaching and learning that considers the mobility of learners and the design of their learning spaces. She has over thirty years experience as a teacher in education with the previous ten in academic educational development in Higher Education. Diane has a Master and Bachelor of Education.

Lynette Zeeng

Lynette lectures in photography in the Communication Design Program. She also teaches into Design lab across all first year disciplines and to Multimedia Post Graduate students. She received her Master of Arts Degree (Visual Communication) from the RMIT University in 1996. Lynette works as a commercial photographer and holds regular seminars for Polaroid Australia on Photographic Art techniques. Her work has earned her several awards including an Honourable Mention in the past two Polaroid International Photography Awards. She is on judging panels for several bodies of professional photography. Lynette's work is exhibited regularly and is widely published in books and magazines, nationally and internationally.