



## Educating educators in the purposeful use of Web 2.0 tools for teaching and learning

Iain Doherty and Pauline Cooper

Learning Technology Unit, Faculty Medical and Health Sciences  
University of Auckland

Our paper reports on the provision and evaluation of continuing professional development workshops to teach educators how to use Web 2.0 applications and services constructively in their teaching. We describe the design research approach that we took to developing the workshops and we present the research results that led us to re-design the workshop format to the point where we are now delivering semi-structured, project-based workshops. Our paper concludes by discussing whether the project-based approach to teaching the workshops will result in higher levels of implementation by participants. We also consider whether introducing the university promotion process into the workshops will increase the incentive for participants to put what they have learned into practice.

Keywords: Web 2.0, blog, wiki, social, bookmarking, networking, workshops

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### Web 2.0 Workshops

#### Introduction

We report on the development, delivery and evaluation of Web 2.0 workshops for educators at the University of Auckland. We have delivered six workshops over an eighteen-month period. During that time we have gathered data on participants' knowledge about and use of Web 2.0 applications and services in their teaching. We have also evaluated the workshops, conducted follow-up interviews with participants and reflected in action and on action as workshop facilitators. As a result, we have revised the workshop format twice and we now deliver workshops that are semi-structured and project-based. Whilst we still feel that we need to "fine tune" the workshop format, we believe that we are much closer to a workshop format that meets the learning needs of the participants. We also believe that we have a model that goes some way to incentivizing participants to innovate in their teaching and that this model might be applied more widely for professional development purposes. The process of developing and re-developing the learning activities for the workshops has resulted in the development of a range of online resources and a social networking environment. The online resources and the social networking environment provide pre and post-workshop support for participants. Educators who cannot attend the workshops can also use the resources. We have yet to conduct any research into whether this is happening but we see the potential for engaging educators who lack the time to attend workshops.

#### Background

The Learning Technology Unit (LTU), Faculty of Medical and Health Sciences (FMHS) University of Auckland, developed and delivered a successful Web 2.0 workshop in November 2007 as part of the University's annual teaching and learning showcase. Based on the fact that the University was developing an e-learning strategy with a focus on Web 2.0 tools, the University's Centre for Academic Development (CAD) asked the LTU to deliver a series of Web 2.0 workshops for University staff during 2008. The LTU delivered three workshops at the CAD in 2008 (June, September and November). For reasons provided below, we will be reporting on two of the three CAD 2008 workshops. Based on the success of the 2008 workshops, the CAD asked the LTU to continue to deliver the workshops during 2009. Additionally, the LTU decided to deliver the same workshops within the FMHS during 2009. We did this to meet the needs of educators – particularly clinical educators – who found it difficult to make the time to travel to the central university for the CAD workshops. We will be reporting on three workshops

delivered during 2009; two of these were delivered at the CAD (March and July) and one was delivered at the FMHS (March); the July 2009 workshop was the first workshop to make use of the semi-structured project based approach to teaching educators how to use Web 2.0 tools in their teaching. This workshop will be described in some detail.

## **Research approach**

We adopted a design research approach to developing and delivering the workshops. This approach is based on the work of Thomas Reeves (Reeves, Herrington, & Oliver, 2005) – amongst others – and it is an approach that we have used successfully in the development of a Masters course on e-learning and clinical education in which we teach educators the theory and practice necessary to become instructional designers (Blake & Doherty, 2008; Doherty & Blake, 2007). In designing our research project we have shown fidelity to the following design research principles: (1) A focus on broad-based, complex problems critical to higher education; (2) The integration of known and hypothetical design principles with technological affordances to render plausible solutions to these complex problem; (3) Rigorous and reflective inquiry to test and refine innovative learning environments as well as to reveal new design principles; (4) Long-term engagement involving continual refinement of protocols and questions; (5) Intensive collaboration among researchers and practitioners; and a commitment to theory construction and explanation while solving real-world problems.

There are two aspects to the broad based nature of the problem with which we are dealing. The first problem has to do with the known difficulties – lack of recognition for teaching and lack of time on the part of educators – with engaging academic staff in professional development opportunities for teaching with technologies (Bradwell, 2009; Joint Information Systems Committee, 2003; Learning Technology Unit, 2008; Steel, 2007). The provision of workshops per se does not address the issue of lack of reward for teaching. However, as the workshop design has matured into a project-based approach we have connected innovation in teaching with the University's performance criteria for teaching promotions thereby addressing the reward and recognition issue. We will return to this point in the discussion section of our paper. The provision of the workshops supported with online learning materials ([www.virtuallythere.wikispaces.com](http://www.virtuallythere.wikispaces.com)) and a social networking environment ([www.virtuallythere.ning.com](http://www.virtuallythere.ning.com)) does address the issue of a lack of lecturer time to engage in professional development as pre and post workshop support is offered in a flexible format. Also, the availability of online resources provides for the needs of those educators who cannot attend the workshops. The second real world issue that we are dealing with is that of providing educators with the necessary skills to support students studying at a distance. In our own Faculty this is particularly important for postgraduate taught courses and for geographically dispersed medical and health science students on clinical placements.

The use of known and hypothetical design principles and rigorous and reflective inquiry to test and refine our learning environment will be explained below when we outline the initial approach that we took to designing the workshops and the changes that we have made over time in response to participants' evaluations, follow-up interviews and our own reflections both in action and on action. Our long-term commitment to this project is given in the fact that we have a three year ethics approved research project that focuses on the design and delivery of workshops to support academics in the use of Web 2.0 tools for their teaching. Collaboration between practitioners and researchers occurs as we interact with the workshop participants and as we conduct a three-month semi-structured follow-up interview as part of our research process. We are committed to theory construction through developing design principles for delivering effective professional development workshops. We have come to see that the design principles might be applied more broadly to create professional development opportunities that address the key problems or recognition and reward for educators who innovate in their teaching. We will return to this issue in our discussion.

## **Methodology**

Prior to teaching each workshop, we asked participants to complete a pre-workshop survey that evaluated their extant levels of knowledge with respect to Web 2.0 and Web 2.0 applications and services. This survey also evaluated participants' prior use of the Web 2.0 applications and services in their teaching. The focus of this paper is the design research approach that we took to developing the workshops and, in particular, the process of rigorous and reflective enquiry to refine the workshop environment. For that reason we will not be reporting on participants' extant levels of knowledge with respect to Web 2.0 and Web 2.0 applications and services. Nor will we be reporting in detail on participants' use of the Web 2.0 applications and services in their teaching. We would simply note that participants' conceptual knowledge of Web 2.0 was almost non-existent. Secondly, participants had a limited knowledge of the three Web 2.0 tools – blogs, wikis and social bookmarking – that we covered in the workshop.

We administered a post-workshop survey that initially consisted of ten questions taken from the University's question bank. These questions measured participants' satisfaction levels with the workshop. After delivering the first workshop we made changes to the post-workshop evaluation; the changes included additional questions relating to participants' perceived preparedness to use the Web 2.0 tools in their teaching together with specific questions about learning activities that we had introduced to enhance the workshop experience. When we changed to a project-based workshop format we again refined our post-workshop evaluation. Revisions of this sort are in line with the fourth principle of design research, "Long-term engagement involving continual refinement of protocols and questions" (Reeves et al., 2005). We conducted three-month post workshop interviews with participants to determine if and how they have used the Web 2.0 tools and to identify factors that impacted positively and factors that impacted negatively on their ability to put what they learned into practice. Finally, reflection in practice and reflection on practice (Schön, 1987; Smith, 2001; Waters, 2005) formed a key part of our methodology.

## **Workshops**

### **Scheduling and reporting**

We advertised the workshops for staff with direct or indirect teaching responsibilities. Despite this fact, none of the participants in the second 2008 CAD workshop (September) were involved in teaching. Therefore, although we ran the workshop to meet the needs of general staff, we are not reporting on the second 2008 CAD workshop. We will report research results from: workshops one and three delivered at the CAD in June and November of 2008; workshop four delivered at the CAD in March of 2009; workshop five delivered at the FMHS in March of 2009; and workshop six delivered at the CAD in July 2009. Participants in these workshops were involved in teaching in three different ways: educators directly involved in teaching in a particular subject discipline; staff involved in teaching in another capacity such as library staff providing information literacy workshops; staff indirectly involved in teaching such as learning designers working for an e-learning design and development group. Whilst the 2008 workshops were delivered in a single session, the 2009 workshops were delivered over two sessions. This change reflects the gradual shift towards a personalised project based approach to learning that culminated in workshop six being delivered in terms of a fundamentally revised format realised in terms of taking a semi-structured, project-based approach to running the workshops. The purpose of the second part of the workshop was to allow participants to engage more fully with the uses of the Web 2.0 tools for teaching.

### **Workshop format one**

Workshop format one was used in workshop one at the CAD in June 2008. The format for this workshop has already been described in a paper reporting on the first three workshops delivered in 2008 (Doherty, Blake, & Cooper, 2009). However, if the reader is to understand the reasons why we have now adopted a semi-structured project-based approach to our workshops, we need to explain the developmental history of the workshops. Our initial approach was based upon a model of active learning (Fink, 2006) involving experience and dialogue. Experience can consist of either observation or of doing something. Dialogue might be with oneself in the form of self-reflection or with others through conversation or group discussion. Our broad strategy was to ensure that we achieved the three types of educational presence outlined by Rourke et al. (Rourke, Anderson, Archer, & Garrison, 1999) and later by Hutchins (Hutchins, 2003): cognitive presence which occurs through frequent and effective interaction with content; teaching presence which occurs through frequent and effective interaction with the instructor; and social presence which occurs through frequent and effective interaction between students (Hutchins, 2003). We had a number of pedagogical tactics – "the detailed methods we use to set tasks for students, encourage their participation, offer guidance and feedback, etc" (Goodyear, 2005, p. 3) – to help us realize our aims and these are detailed below.

The workshop was structured around observing, self-reflection, doing, and dialogue and was divided into four parts; part one consisted of a conceptual overview of Web 2.0; part two covered blogging; part three covered wikis; and part four covered social bookmarking. Instructors explained Web 2.0 as a concept in terms of a shift on the World Wide Web to an architecture of participation based on applications and services that allow traditional web consumers to produce content, collaborate and share resources (Alexander, 2006; Anderson, 2007; Bradwell, 2009). The particular Web 2.0 technology was demonstrated using a PC linked to an overhead projector. The instructors illustrated some educational uses for the tool being demonstrated whilst encouraging participants to ask questions. Participants were asked to reflect on how they might use the particular technology in their teaching before being given the

opportunity to practice with the technology. Practice consisted of creating an account for the particular tool and using the functionality that had been demonstrated.

The instructors moved around the classroom providing technical help for participants as they worked with the tools. Instructors also continued to encourage participants to think about how the Web 2.0 tools might be used in their own teaching. Although we had asked participants to relate what they were learning to their own teaching, the reality was that the question of the teaching and learning context of the participants was eclipsed by the fact that participants focused almost wholly on learning the technical aspects of the three technologies. This was evidenced by the fact that questions put to instructors almost wholly concerned the practical challenges of working with the new tools. Time management became an issue, which meant that the instructors did not conclude the workshop with the intended summary and dialogue with participants on their thoughts on how they might use the tools in their teaching. Overall, it was the judgment of the facilitators that there was insufficient effective interaction between: participants and instructors; participants and content and participants and participants and that the intervention outcomes – “whether students learn what they are intended to learn” (Sandoval, 2004, p. 215) – were only partially achieved. Participants learned how to use each of the tools but did not reflect sufficiently on the application of the tools to their teaching.

### **Workshop format one research results**

The post-workshop evaluation for workshop one consisted of a standard set of 10 questions from the University question bank: (1) I had a clear idea of what was expected of me in this workshop; (2) The workshop helped motivate me to learn; (3) I found the workshop intellectually stimulating; (4) The workshop materials helped me to learn. (5) This workshop helped deepen my understanding; (6) the volume of work in this workshop was appropriate; (7) The teaching staff showed an interest in my needs during this workshop; (8) I received helpful feedback on how I was going in this workshop; (9) The physical environment of the workshop helped me to learn; (10) Overall, I was satisfied with the quality of this workshop. Participants could respond a five-point Likert scale that ranged from strongly agree to strongly disagree.

The total number of participants who agreed to take part in the research project for workshop one was 11 ( $n=11$ ). However, only nine ( $n=9$ ) of the participants completed the post-workshop evaluation. The first draft of our paper reported the results of this evaluation in detail. However, we see now that these results – which essentially consist of a “customer satisfaction survey” – do not contribute to an understanding of our design research process. Nor do the results help to make clear why we have revised the workshop format over time. Therefore we are not reporting these results beyond stating that the workshop was evaluated very positively with all participants’ reporting high levels of satisfaction across all 10 questions. Whilst these sorts of evaluations may be little more than “customer satisfaction” surveys we would note that positive evaluations with respect to motivation to learn, deepening of understanding and intellectual stimulation at least indicate that participants felt engaged with what we were attempting to teach them. Secondly, the evaluations do indicate that overall participants had a positive learning experience and that overall they were satisfied with the quality of the workshop.

Given the positive evaluations, our re-design of the workshop was not based on participants’ evaluation. Rather, the re-design was based on our reflections whilst teaching the workshop and on our reflections after the workshop. As reported above, we were concerned with the quality of interactions between participants and instructors, between participants and content and between participants and participants. At the time that we revised the workshop format we did not have the 3-month follow up questionnaires. However, we now have the completed questionnaires and they corroborate what our reflective practice told us; 8 respondents made some mention of the fact that they needed a better understanding of the pedagogical use of the tools (Doherty et al., 2009). Essentially, participants had focused on the technical aspects of the tools and had left the workshops with an insufficient understanding of the pedagogical application of the tools.

### **Workshop format two**

When we re-designed the workshop we made use of the work of Dunlap et al (Dunlap, Sobel, & Sands, 2007) on designing for deep and meaningful student-content interaction. The interaction types together with the form of implementation and expected intermediate outcomes are detailed in Table 1. Our overall aim when re-designing the workshop was for students to feel able to use the three tools in their teaching at the end of the workshop. We conjectured that incorporating a variety of carefully planned and well managed triggering, exploration, integration, resolution, reflective and metacognitive interactions would

lead to more reflective thinking on the part of the participant and that this would enable us to realize the aim of the workshop. The discussion board needed for the “Resolution Interactions” detailed in Table One below was provided on the workshop wiki.

**Table 1: Interaction types**

Interaction type [strategy]	Implementation [embodied conjectures]	Intermediate outcomes
Triggering Interactions enable participants to see a problem or lead to a sense of puzzlement.	Have participants work in pairs to reflect on why they were attending the workshop and to consider what they hoped to gain from the workshop. Have participants post their responses to the Wiki discussion board.  Provide an explanation of what constitutes “deep learning” and set participants the specific task of reflecting on how the three Web 2.0 tools might be used in their own teaching context.	Participants engage with one another. Meaningful answers posted to Wiki discussion board.  Questions about their own teaching context throughout workshop.  Engaged paired discussions.
Exploration Interactions encourage participants to follow their own paths through content and to pursue their own areas of interest.	Have students create their own Blogs, Wikis, and social tags whilst keeping in mind the question of using the tools in their own teaching practice.	Participants’ questions are a balance of technical and pedagogical.
Reflective Inquiry Interactions enable participants to ask questions, challenge assumptions and critically examine the implications of their actions.	Encourage students to ask the instructors questions – both concerning the technologies and their pedagogical value – throughout the workshop. Provide the opportunity for reflective inquiry through group discussion.	Participants are focused on both the technologies and their pedagogical use.
Integration Interactions enable participants to connect ideas and create solutions.	At the end of each practical session divide participants into pairs to talk about educational uses of the tools.	Participants engage with one another and with facilitators.
Resolution Interactions enable participants to apply new ideas and assess solutions.	Ask each participant to post to the discussion board on their thoughts on uses of the tools for their own teaching context and discuss as a group.	Discussion board postings evidence uses of tools for student learning.
Metacognitive Interactions enable participants to reflect on their own cognitive processes or to think about their own thinking.	At the end of the workshop return the participants to their reflections from the initial exercise and ask them if and how their perceptions of the technologies for teaching and learning had changed during the workshop.	Discussion that reflects metacognitive thought processes.

Broadly speaking, this second workshop format followed the format for the first workshop. That is, the workshop was divided into three parts with each part covering one of the Web 2.0 tools. However, in order to allow time for the various triggering interactions detailed in Table One above, we reduced the demonstration time for the various tools to cover only key functionality. With the exception of the metacognitive interaction detailed in Table One above, instructors ensured that each of the triggering interactions occurred. The reason that the metacognitive interaction did not occur is that we ran out of time. Reflecting on the workshop as we were teaching, we could see that the resolution interaction – participants posting to the discussion board on their thoughts on uses of the tools for their own teaching context and discuss as a group – was working particularly well as the activity focused participants on thinking about how they would use the tools in their teaching. As reported in our previous paper (Doherty et al., 2009), the content of the discussion board postings evidenced thoughtfulness with respect to the educational use of the Web 2.0 tools.

## Workshop format two research results

Workshop format two was used for workshop three, four and five (October 2008 at the CAD, March 2009 at the CAD and March 2009 at the FMHS respectively). Of the total number of participants from workshops three, four and five who agreed to take part in the research (n=21), only 19 (n=19) completed the post-workshop surveys. We used the same 10 standard “customer satisfaction” questions from the University question bank. However, having re-designed the workshop with a much clearer focus on outcomes related to preparedness to use the tools, we needed to revise the questionnaire to measure participants’ perceived preparedness to teach with Web 2.0 technologies. We therefore added three statements to the post workshop evaluation relating to participants’ readiness to use Blogs, Wikis and Social Bookmarking in their teaching. As a result of refining the workshop format to include a series of paired and group discussions concerning the uses of Web 2.0 applications and services in teaching and learning, we also added two statements pertaining to these activities. The additions are detailed in Table Two below.

Again, we are not going to report on results for the standard ten questions because none of the participants expressed dissatisfaction with the workshop. In other words, the workshops were evaluated very positively in terms of the teaching process, instructor activities and quality of content. We are, however, going to present the data for the questions that we added to the post-workshop evaluation.

**Table 2: Selected post-workshop evaluation questions: Workshops 3, 4 and 5**

	SA	A	N	D	SD
I could now create and use a blog in my teaching	4	12	3	-	-
I could now create and use a wiki in my teaching	5	11	3	-	-
I could now use Social Bookmarking in my teaching	1	10	8	-	-
The class discussions helped me with my learning	3	13	3	-	-
The small group activities helped me with my learning	2	8	9	-	-

SA=Strongly Agree; A=Agree; N=Neutral; D=Disagree; SD=Strongly Disagree

With respect to ability to use the tools in teaching we see neutral responses from participants with respect to Blogs (n=3), Wikis (n=3) and Social Bookmarking (n=8). The cause for the relatively high number of neutral responses for Social Bookmarking was the fact that Social Bookmarking was taught last in each workshop and time constraints meant that the topic was covered in a relatively hurried fashion. However, by far the greater number of participants felt ready to use Blogs and Wikis in their teaching and over half of the participants felt ready to use Social Bookmarking in their teaching.

A large number of participants (n=9) were neutral about the value of small group activities. Overall, participants seemed to gain more value from the class discussions with the majority of participants (n=16) agreeing or strongly agreeing that the class discussions helped them with their learning. This finding is somewhat at odds with the fact that small group activities comprised of a series of paired discussions in which participants discussed how they might use the tools in their teaching. Participants were then asked to post their thoughts on the educational uses of the tools to the discussion board. The majority of discussion board postings showed evidence of thoughtfulness with respect to the potential use of the tools. Therefore, one explanation for the relatively high number of neutral responses may be that those participants had formed their thoughts prior to the paired discussion activity and did not gain much value from engaging in conversation.

We now have interview data from workshops three, four and five. We conducted 6 (n=6) interviews for workshop number three, 2 (n=2) interviews for workshop number four and 4 (n=4) interviews for workshop number five. This gives us a total of 12 (n=12) interviews from the 19 (n=19) participants from these workshops who agreed to take part in the research project. The 7 (n=7) participants who did not take part did not respond to requests to be interviewed despite being contacted on numerous occasions. The interview process consisted of asking the participants set questions whilst providing an opportunity for participants to expand on their answers. The questions covered: use of the Web 2.0 tools since completing the workshop; environmental factors that had either facilitated or hindered their use of the tools; future goals for teaching with the tools; and perceived strengths and weaknesses of the workshop. The first author read the responses several times before identifying potential themes and allocating responses to the identified themes.

Only 3 (n=3) of the interviewees had made use of the Web 2.0 tools in their teaching since completing the workshops. 1 (n=1) participant had used a wiki to deliver content to a school outreach programme; 1

participant (n=1) had made use of all three Web 2.0 tools through including information on the tools in their course content for their students who were trainee teachers; 1 (n=1) librarian had been teaching others how to use social bookmarking as part of an information literacy course. Enabling factors for those who had made use of the Web 2.0 tools included: technical support either from within their own department or from outside the department (n=1) and support at a departmental level for innovating with Web 2.0 tools; personal motivation and attitude (n=1). The third respondent who had used the Web 2.0 tools in teaching did not provide any meaningful information on factors that had helped in the innovation.

All interviewees were asked about whether they had encountered any barriers to making use of Web 2.0 in their teaching. 4 (n=4) participants cited lack of time. Two participant responses stand out here. The first is from a participant who did not make any use of the Web 2.0 tools after the workshop.

PPRF [New Zealand research rating exercise] means you've got to have research, our funding relates to research. So although my research is often education research because my PhD is in educational technology and teaching with technology, it's very much if you don't get research then why are you doing it? So, teaching is less important, very much less important.

The second response is from a participant who did implement Web 2.0 tools in their teaching.

The biggest barrier is time, this isn't a project that is funded separately I'm just doing it on the side; it's a bit of a big barrier. Passion for teaching over comes that!

4 (n=4) respondents cited difficulties on the part of end-users with respect to use of the new Web 2.0 tools; 3 (n=3) participants responded that the Web 2.0 tools were not the right tools for what they wanted to do with their students; 2 (n=2) respondents cited technical difficulties with the tools; 1 (n=1) respondent cited confusion on the part of colleagues who had to make use of the Web 2.0 tools; 1 (n=1) respondent cited concerns over privacy of information. Reference to end users and colleagues encountering difficulties with the Web 2.0 tools is an interesting find. Participants who decide to innovate in their teaching may face the additional challenge of having to "train" their students and/or their colleagues to use Web 2.0 tools that they are implementing. This will be true whether or not students are of the Net Generation (Kennedy et al., 2009). This fact points to the need for institutes to audit students with respect to their technology skills in order to determine what sort of training students need in the use of technologies. If support for students is not provided centrally then the additional time required to teach students how to use the Web 2.0 tools may act as a potential barrier to innovating in teaching.

When asked about the strengths of the workshop, 8 (n=8) respondents indicated that the workshop was delivered at an appropriate level for their learning needs; 2 (n=2) respondents indicated that the content was appropriate for their learning needs; 1 (n=1) respondent cited the group discussions as particularly helpful; and 1 (n=1) respondent cited the "hands on" nature of the learning as particularly useful. We would see a correlation with the data gathered from the post-workshop evaluations. Those evaluations showed that overall the participants were satisfied with the quality of the workshop and that they were satisfied with the content, the level of their learning and the support of the facilitators. When asked about weaknesses of the workshops 2 (n=2) respondents mentioned lack of time to cover all the content; 3 (n=3) respondents said that there was too much content; and 3 (n=3) respondents mentioned that the workshop did not go into sufficient depth about how the tools might be used in teaching. Overall we would conclude that we provided a quality learning experience in the workshops; however, we struggled with achieving a balance between teaching participants how to use the tools and teaching them about the potential uses of the tools in teaching. We set out to address these issues with our third workshop format.

### **Workshop format three**

We had three main reasons for making the second change to the workshop format; first, although the post-workshop survey showed that the majority of participants felt ready to use the Web 2.0 tools in their teaching, it was our perception based on our reflections and on attendance at the follow up workshops for workshops four and five, that participants were still struggling in terms of seeing how they might use the Web 2.0 tools effectively in their teaching. For example, attendance at the follow up workshops was low with 2 (n=2) out of a possible 7 (n=7) participants attending for workshop four and 2 (n=2) out of a possible 7 (n=7) participants attending for workshop five. Those who did attend had not come prepared to engage in any significant depth with the Web 2.0 tools. Secondly, as experienced educators we noticed that at any point in time a number of participants would be waiting for other participants to complete the "hands on" work with a particular Web 2.0 tool. This happened despite the suggestion from facilitators

that participants use the time to explore one or more Web 2.0 in terms of their own particular wants and needs. Finally, we noticed that not all participants were interested in learning about all of the Web 2.0 tools. This meant that some participants were spending time “learning” about Web 2.0 tools that did not particularly interest them.

Our decision to take a more formal project-based approach to the workshops was based upon successful experience with and research into project-based learning on a taught masters course (Blake & Doherty, 2008; Doherty & Blake, 2007). In order to give students time to engage in the project we fundamentally revised the workshop format. Instructors provided a brief overview of the three Web 2.0 tools and encouraged participants to ask questions during the demonstrations. The instructors then explained the teaching process in terms of the model of constructive alignment (Biggs, 1996). Using the work of Jones on constructively aligning the use of technologies in teaching (Jones, 2007), instructors explained to participants that technologies needed to be integrated into the teaching process in a way that enhanced the teaching and learning process. Participants were provided with a number of examples of how technologies could be used purposefully in teaching. Participants spent the remaining hour and half of the workshop engaged in the project.

The project that we designed involved the learner in creating a learning design for constructively incorporating technologies into their teaching. Participants were provided with a Learning Design Worksheet structured as follows: (1) Briefly describe the teaching challenges/problem that you think could be addressed by utilising a Web 2.0 tool; (2) Describe how you think the Web 2.0 tool will help you to overcome this challenge; (3) How might you meaningfully integrate your chosen Web 2.0 tool into your teaching so that it helps your students meet one or more of the intended learning outcomes for your course; (4) Describe the learning task that you will set for your students; (5) Detail the learning resources and supports that will be required to ensure the success of this intervention; (6) Describe how you will assess your students.

The project approach enabled learners to consider their own teaching situation whilst using the module content – educational theory and help pages on each of the three Web 2.0 tools – on the workshop wiki. Learners were able to take responsibility for discovering, organising, analysing and synthesising content through approaching the content with a specific and personal project in mind. Taking a project-based approach meant that we limited participants’ “hands on” activity to engaging with the tools as they worked through completing the project document. Essentially this meant that participants spent the majority of the second part of the workshop engaged in analysing why they might make use of a particular tool in their teaching.

### Workshop format three research results

Again, we used the standard ten questions from the University question bank and again participants’ expressed high levels of satisfaction with the workshop. We modified the post-workshop evaluation for workshop six to reflect the fact that we had taken a project-based approach to delivering the workshop. Firstly we asked participants to respond to the following two statements: “The learning design project helped me to understand how to integrate Web 2.0 technologies into my teaching” and “The group discussion on learning designs helped me to understand the challenges and benefits of using Web 2.0 technologies in my teaching”. 6 (n=6) of the 7 (n=7) participants who agreed to take part in the research completed the post-workshop evaluation.

**Table 3: Selected post workshop evaluation questions: Workshop 6**

	SA	A	N	D	SD
The learning design project helped me to understand how to integrate Web 2.0 technologies into my teaching	1	2	3	-	-
The group discussion on learning designs helped me to understand the challenges and benefits of using Web 2.0 technologies in my teaching	1	3	2	-	-

SA=Strongly Agree; A=Agree; N=Neutral; D=Disagree; SD=Strongly Disagree

We made a number of other alterations to the post-workshop evaluation to reflect the revised workshop format. Participants were asked which of the Web 2.0 tools they had used in their projects and participants could respond in terms of one or more of the tools. The results were as follows: wiki (n=3); Social bookmarking (n=3); blog (n=2). Finally we asked participants to indicate which Web 2.0 tools they felt able to use in their teaching. The results are as follows: wiki (n=3); social bookmarking (n=3); blog

(n=2). This means that the participants who made use of the respective tools in their learning design project all felt able to use those tools in their teaching by the end of the workshop. Whilst this is a positive find, the majority of participants from workshops three, four and five also indicated that they felt ready to use the respective tools in their teaching.

Enrolments for the “clinic” following workshop six were higher with 5 (n=5) of a possible 7 (n=7) educators from workshop six attending. The participants had brought their learning designs and worked with the Web 2.0 applications and services to put their learning designs in to practice. We were encouraged by the fact that the majority of educators came to the clinic and by the fact that they left the clinic having worked through their design with the workshop facilitators.

## Discussion

We would say that the second workshop format – project-based and semi-structured – has overcome two of the teaching issues that we identified: participants waiting for other participants and participants “learning” about tools that did not particularly interest them. This judgement is based on our reflections as experienced educators. The third issue that we identified with respect to workshops one, three, four and five concerned participants putting what they had learned into practice. The attendance rate at the “clinic” for workshop six was encouraging with 5 (n=5) of a possible 7 (n=7) participants returning for the second part of the workshop. At this time we have not carried out the three-month interview for workshop six and so we cannot say whether participants from workshop six have put what they learned into practice. If we find that they have used the Web 2.0 tools then we will need to try to determine whether the learning design project contributed to the use of the tools.

We believe that there may be a methodological point that we need resolve in order to better gauge whether the workshops are preparing participants to use the tools in their teaching. Our post-workshop evaluation asks participants about whether they feel prepared to use the tools in their teaching. Feeling prepared may be interpreted in terms of confidence or competence. That is, participants may feel that they are ready to use the tools in their teaching whilst lacking the requisite degree of knowledge to go away and work with the tools. We need to revise our post-workshop evaluation to remove this ambiguity. Given that we have now moved to a project-based approach to the workshops we will need to add questions relating to the project based approach to the three-month follow-up interview. At the time of writing we have not written the new questions. However, the questions will broadly cover the usefulness of a project-based approach and use made of the learning design since completing the workshop. The other questions will remain the same.

Broadly speaking we have refined our approach to teaching these workshops in an attempt to engage participants at a deeper and more “concrete” level with the educational uses for the Web 2.0 tools. This has culminated in a project-based approach to teaching the workshops. It occurs to us now that we might provide participants with information concerning the university’s teaching promotion criteria, which make reference to innovating in teaching. This strategy should provide participants with additional incentive for working with the learning design once they have completed the workshops. Furthermore, we are considering running one-hour seminars that cover innovating in teaching in the context of the University’s promotion criteria. This approach to teaching Faculty about technologies in teaching would provide Faculty with a “taster” of what might be done with technologies in teaching whilst also making it clear how innovating in teaching is rewarded within the University promotion scheme.

## Conclusions

Taking a design research approach to developing and delivering these workshops has been important for us in terms of systematically evaluating the workshops. The positive evaluations for the learning materials, levels of engagement and facilitator support suggest that the key elements in the teaching process are working well. Once we have further evaluations from project-based workshops we will be in a better position to judge whether this approach helps participants to understand how to integrate Web 2.0 purposefully into their teaching. Ultimately we will need to see evidence of successful use of Web 2.0 in teaching as a result of these workshops because only then will the workshops have realised their aim of giving staff the capability to support their students using Web 2.0 tools.

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**Authors:** Iain Doherty: [i.doherty@auckland.ac.nz](mailto:i.doherty@auckland.ac.nz)  
Pauline Cooper: [p.cooper@auckland.ac.nz](mailto:p.cooper@auckland.ac.nz)

**Please cite as:** Doherty, I. & Cooper, P. (2009). Educating educators in the purposeful use of Web 2.0 tools for teaching and learning. In *Same places, different spaces. Proceedings ascilite Auckland 2009*. <http://www.ascilite.org.au/conferences/auckland09/procs/doherty.pdf>

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