

# Wrestling and Wrangling with a Worrisome Wiki: An Account of Pedagogical Change in the use of a Web 2.0 technology in a First Year Education Course

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## Abstract

The delivery of higher education in online and blended modes has implications across a range of contexts – economic, pedagogic, technical and social. This article explores the tensions and contradictions of teaching in a blended learning environment in terms of its pedagogic implications. It reports on how a specific Web 2.0 technology (a wiki) was used over a four-year period with and by students in an Education Course to enhance their learning outcomes during their first year of university study.

Student feedback (qualitative and quantitative), and the personal reflections of the first author regarding her teaching approach, kept over a four-year period, provide the dataset for this article. Analysis of these data builds a story of how the wiki developed from an extraneous, inauthentic component of the course to an integral component of a successful teaching and learning experience for both the lead author and the students in the course. This story illustrates how an early career academic wrestled to develop appropriate approaches to adult education; wrangled with largely untested Web 2.0 technologies in higher education; and reaped the rewards of the use of such technologies in enhancing the educational experience of both the students and the lecturer.

Although a highly personal account of wrestling, wrangling and reaping, the article provides valuable insights into the importance of establishing and maintaining authentic pedagogic relationships in increasing online educational environments. It cautions that the development of technical skills alone is insufficient to guarantee improved outcomes for students.

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## Introduction

Web 2.0 technologies (e.g., wikis, moodles, online classrooms) are increasingly being used by universities to deliver courses to increasingly geographically diverse

student cohorts (Glenn, 2008; Rossi, 2010) and by university lecturers who are striving to enhance the learning experience of such students via these technologies (Rossi, 2009; Tabata & Johnsrud, 2008). Web 2.0 technologies are defined in this article as communication technologies which reside on the Web and which afford individual users the opportunity to upload easily and share content with other users. Users become creators rather than consumers of content (Kennedy et al., 2009). This distinction is critical as the use of Web 2.0 technologies allows users to “harness the power of the network and to exploit social interactions and connectivity” (Conole & Culver, 2009, p. 765). Although both authors teach into a range of university courses, this article focuses only on the first author’s experiences with a Blackboard wiki over a four year period in a first year course at a SE QLD university. It presents an account of how the first author reflected upon her teaching in relation to Web 2.0 technologies and struggled to develop an appropriate pedagogy which was beneficial to student learning and at the same time authentic to her as a teacher. The account makes use of personal reflections, student feedback (both formal via university reporting regimes and informal via email and forum comments) as the dataset for the discussion. The article concludes by making a number of recommendations based on some of the successes which have resulted from a resolution of the tensions between technology use and effective pedagogy.

Our background as school based educators encouraged us to conduct this research into the implications of Web-based teaching. Both authors are early career researchers (i.e., within five years of attaining a doctoral qualification) and prior to commencing work as academics were primary school educators. This has philosophical implications for our teaching in regards to both our approaches to teaching which are inextricably grounded in, and bounded by, the necessity to establish and maintain authentic relationships between teacher and student. This article is about technology, but not technology for its own sake, but rather about technology as a means of establishing and maintaining authenticity in pedagogic relationships (Van Manen, 1991) which are increasingly being conducted in blended and online environments. An underlying theme of this story is that a key challenge incumbent in a Web 2.0 mediated learning environment is the management of the increasingly complex social relationships which form as a result of the use of such technologies (Wilcox, Winn, & Fyvie-Gauld, 2005). As the story of the wiki use in a First Year Education course unfolds, this social dimension will become a prominent feature of the eventual, successful use of the wiki for learning and teaching.

## **Literature Review**

Information and Communication Technology (ICT) usage in universities is not a new phenomenon. In relation to pre-service education, ICT has been traditionally used for the submission of assignments, for accessing information, and for basic communication to students via email and Learning Management Systems (e.g., Blackboard or Moodle). The past five years, however, has seen a substantial expansion in the number of universities offering courses solely online (e.g., USQ, Open University) or in a blended mode (e.g., Griffith University). Both of these modes of delivery heavily impact the technological and pedagogical knowledge of academics involved in the teaching of these courses (Kennedy et al., 2009). As this article investigates the pedagogic and social dimensions of ICT, this investigation of the literature will consequently focus on research in higher education related to these dimensions.

Frederickson, Reed, and Clifford (2005) and McLoughlin and Lee (2010) suggest that there is a heightened student expectation of support in blended and online courses. Despite some suggestions in the literature (Berk, 2010) that the current generation of university students is highly competent in the use of ICT; other research (Bennett, Maton, & Kervin, 2008; Kennedy et al., 2009) suggests that the categorisation of students as “digital natives” is not clear. Regardless of the relative technical skills of the students, once a course is delivered in blended or online mode there is a subsequent increase in the expectations that ICT will be used to scaffold their learning (Frederickson, et al., 2005). In many instances, online students insist upon a greater degree of scaffolding than those students in blended or face-to-face courses. Such scaffolding may include specific links to exemplars of quality work, specific Web sites, and a range of self-checks so they could determine whether they are on track (Frederickson et al., 2005). In addition, regular correspondence with lectures or tutors, via email or forums, was also a pre-requisite. The scaffolding which is required by online students relates both to authentic learning and assessment experiences as well as assistance in communicating with lecturers, tutors and peers. Whilst the demand for scaffolding is present certainly in blended and learning environments, students are also likely to assume a greater responsibility for their own learning and this partially explains the students’ desire for self-check activities and continual feedback.

Related to the importance of using ICT for effective scaffolding of student learning is the requirement for ICT to be used as a component of authentic assessment tasks. Selwyn (2007, p. 88) notes that many students have become “highly ‘savvy’ but pressured consumers of higher education who often engage with their studies in ruthlessly pragmatic, strategic, and tactical ways.” So rather than being perceived as “non-engaged” students according to university course survey data, it could be the case that the students are “consuming” only what is required to pass the course. This observation is apparent in this account of wiki use which varied markedly according to the assessment status it was afforded. Assessment pressures also impact wiki usage by students. By their nature, wikis are intended to be sites of collaboration and cooperation; however, the emphasis on individual assessment in higher education, exacerbated by increased online offers, may result in students being less willing to share or to allocate effort in the completion of tasks. Carr (2008, p. 150) suggests that “the discourse of the individual” is still dominant in education, despite the availability of a wide range of collaborative, easy to use Web 2.0 tools. This can result in wikis becoming mere communication tools as opposed to their intended function as tools for collaboration. If this is the case then a big “if” surrounds the use of Web 2.0 for participation, autonomy, and knowledge exchange.

A further contribution of Web 2.0 technology for a successful learning experience relates to its potential to support the social experience of students who are studying in blended or online modes. Wilcox et al. (2005) identified a range of factors which impacted the student experience including learning, teaching and assessment strategies; the quality of staff student relationships; and the use of collaborative approaches to student learning. In addition, a significant theme which emerged from their work was the importance of providing support for the social experience of students, and, in particular, first year students. It could be argued that the provision of social support to online students is even more vital (Rossi, 2009). This may be challenging as the use of ICT to provide this support takes energy, initiative and practice. The need for opportunities for peer-collaboration was reported as a distinctive requirement by Fredrickson et al. (2005) and, as the core of Web 2.0 technologies is the ability to bring people together, they appear ideally

places to support the social experience of blended and online students (Kennedy et al., 2009).

The key observation gleaned from the literature above suggest that Web 2.0 technologies, by themselves, will not result in improved outcomes for students in relation to student learning nor social support. Lecturers need to develop a pedagogic practice which meets the varied needs of the students as well as establishing a context where connections can be made between the various elements of the educational enterprise – lecturer, students, learning resources, assessment tasks and Web 2.0 technologies. This environment is complex (Rossi, 2009) and requires the lecturer to engage in a continual and sustained process of planning, action, observation and reflection. It is this cycle of planning, action, observation and reflection which is evident in the development of a wiki from an incidental to an integral element of the first author’s teaching practice.

## Methodology

This article reflects upon the use of the Blackboard wiki tool in an undergraduate education course over a four-year period 2007–2010. It highlights a series of specific and intentional changes made to the wiki assessment task in order to improve student outcomes. Planning, action, observation, and reflection were conducted on a cyclical basis after each iteration of the course. Improvement to teaching and learning in the course was made at the local course level, where the issues identified for improvement were able to be changed by the individuals involved (Cohen, Manion, & Morrison, 2000). This process of diagnosis with “self-reflective inquiry” was undertaken in order to improve practice and demonstrates a reflective action research approach (Cohen et al., 2000) whereby “the combination of action and research renders that action a form of disciplined inquiry, in which a personal attempt is made to understand, and improve and reform practice” (p. 226). The action research model utilised here involved, planning, action, observation and reflection, used in an ongoing cyclical process to improve practice. The notion of reflexivity is central in action research as the researcher is the participant and practitioner in the research (Cohen et al., 2000).

**Table 1 – Student Evaluation of Course (SEC) Data – 2007–2010**

	2007		2008		2009		2010	
<b>Respondent rate</b>	17% (23)	15% (37)	15% (24)	14% (24)	22% (29)	25% (47)	54% (46)	35% (58)
<b>Student evaluations of course score</b>	5.1 / 7	4.1 / 7	5.1 / 7	4.7 / 7	5.3 / 7	5.6 / 7	6 / 7 (High RIB ranking)	6 / 7 (High RIB ranking)
	Campus 1	Campus 2	Campus 1	Campus 2	Campus 1	Campus 2	Campus 1	Campus 2

1 = Unacceptable through to 7 = Excellent.

This article thus uses two data sets; the formal Student Evaluation of Course (SEC) data and informal student feedback, as well as the first author’s teaching reflections upon these data which led into a cycle of planning and action. The SEC data were collected electronically and consisted of two sections; ten mandatory, university wide questions (7 point scale) and open-ended questions relating to positive aspects of the course and areas for improvement. Table 1 presents the Multiliteracies in

Education data across the four-year period in relation to Q10. “Overall, how effective was this course in helping you to learn?” As can be seen from the data, in 2010 the course received a high Rating Interpretation Benchmark (RIB) ranking which is a comparison of aggregated data from courses across the university with similar cohort sizes and student composition. The same course is offered on two different campuses of the same university.

In this section the first author’s reflections on the various iterations of the wiki are presented and evaluated. These reflections are discussed in the first person and thus detail the experience of using a wiki over this four-year period. In doing so, the central themes of the journey are explored; namely, how the first author wrestled and wrangled with the wiki to eventually reap the rewards of her endeavours. The first author presents three iterations in this story – Iteration One, Precursors and Initial Misgivings; Iteration Two, 2008 – The Wrestling and Wrangling Continues; and Iteration Three, 2009 and 2010 – I Reap What I Have Sown. The Blackboard wiki became available in 2007 and the first author recalls being keen to test this ‘new’ tool with the students and thus began this journey. As the first author is a confident user of technology, this reflection is fundamentally about her development as a teacher in the use of a technology to become a more effective educator and thus improve student engagement and satisfaction. She now charts this development.

### **Iteration One: Precursors and Initial Misgivings.**

By way of background, Multiliteracies in Education is a first year, undergraduate Bachelor of Primary Education course. Students are introduced to a Multiliteracies framework (Cope & Kalantzis, 2000) as a way to understand traditional and new literacies and textual forms. The course requires students to create multimodal texts (e.g., Interactive PowerPoint, MovieMaker Photostory; Digital Poem; Digital Recount). Students develop multiliteracy practices and consider the implications of multiliteracies pedagogies for the primary classroom.

The assessment task wiki was introduced in 2007 as a 10% component of Assessment Item 3, which asked students to respond to a range of course topics to support the learning of theoretical content in the course. It was introduced as a result of my evaluation of the similar task in 2006 where the students were asked to do this task via a discussion board. This was an inauthentic task as the discussion board could not accommodate the range of modalities required for a successful understanding of the course content. The wiki was therefore used as a means to create a group project that allowed students to respond through a range of modalities. The Web-based capability of the wiki also provided a communal group site to collate and share student responses. The specific wiki tasks were varied, in relation to the topics and also in the way group interaction and contribution could take place. Students relied upon the contributions of their group to complete their wiki; however, I decided to mark students individually on their contributions to their group wiki. I felt that as I was trialling the group potential of the wiki task, that it would be fairer to give an individual mark to contributions.

There was substantial commentary regarding the wiki task in the student evaluations. Despite some comments recognising that the wiki was positive because it helped students engage with course content, or learn from the varied interpretations of the topic by their peers, the majority of feedback concerning the wiki was negative. Students commented that they did not like being assigned to a group as they then needed to rely on other members of the group contributing to the task. The students also felt that more time in the course should have been given

to complete the wiki and that the wiki item also should have had a greater weighting relative to the effort that was expended in completing the task (see Carr, 2008; Kennedy et al., 2009).

In reflecting on Iteration One, a number of observations are made. Firstly, it was clear that for students to be more involved with the wiki task it needed to be a more significant component of the course in terms of overall assessment. In light of Selwyn's (2007) views of a discerning student, this would then be an additional motivation to engage with the new technology. Secondly, a means of better supporting group work in a blended environment was required. Thirdly, although the wiki was reasonably straightforward to use (locate, edit and save), further support was required with the technical aspects of wiki use (e.g., uploading screen grabs of websites). In these initial wrestles and wrangles it is apparent that the major issues with the wiki did not relate to the complexities of the technology, but rather with how the affordances and limitations of the technology in relation to group work and assessment regimes were managed.

### **Iteration Two – 2008 – The Wrestling and Wrangling Continues**

During 2008 the wiki task changed from a group task to an individual task. A tutorial group wiki was established and the students were guided on the creation of their own page based on a template for structuring their content. The wiki assessment was modified from a "response to course topics" task to a repository for student created multimodal texts, now weighted at 15%. The students worked on the creation of these texts during their weekly computer workshops. This time the wiki was used as a way to synthesise the workshop tasks. As the students had time in the workshops to work on their wiki, and as the wiki task was more of an authentic component of their assessment, the motivation levels were higher than in the previous year. In addition, the wiki task provided a mechanism for collaboration during their workshops as students were required to jointly create some of their required multimodal texts (e.g., create a joint hyperlinking narrative). Berk (2010) suggests that Web 2.0 collaboration enables the collective intelligence of users to emerge through the pooling of knowledge, research, arguments, and insights from diverse groups of people. In contrast to the 2007 offering, the 2008 feedback provided little reference to the wiki component of assessment. In general, students found completing the wiki during the workshops engaging; however, students commented on the difficulty of the creation of the multimodal texts and suggested that greater scaffolding was needed, and that the task should be worth more than 15% because of the effort expended. The 2008 feedback was focused on the requisite technological skills required to create the multimodal texts rather than the technological skills required to create the wiki itself.

A clear observation in relation to the changed nature of the student feedback was that the modification of the wiki submission, from group contributions to individual contributions, and that the wiki completion was supported in the workshops, had removed some of the more obvious negative aspects of wiki use. My reflection on this issue led me to believe that a modification to the course which embedded the wiki as an integral component of the assessment, and greater provision of assistance in the creation of multimodal texts was still required for student satisfaction.

### **Iteration Three – 2009 and 2010 – I Reap What I Have Sown**

In response to student feedback, the 2009 wiki task was modified to become the key component of their final assessment item weighted at 40%. Students also received detailed instructions on Blackboard about how to complete each of their

required multimodal texts. Students were required to select one of their multimodal texts created during their workshops to enhance and submit via the wiki. The key difference in 2009 was that the wiki task was not used as a means to motivate the students to engage in the workshops, but rather as a means of developing multimodal practices which would constitute their major assessment piece. Consequently, the wiki was an authentic assessment task in relation to the aims and objectives of the course. My valuing of the wiki in terms of authentic assessment is also evident in the literature. Kennedy et al. (2009) suggest that Web 2.0 technologies can provide more flexible access to and opportunities for informal, formative self-assessment by students as well as informal, formative assessment of their work by teachers. In the student feedback there was a distinct difference in the type of feedback received. For the first time, there was no overt mention of the wiki, and the students were generally positive in their comments regarding the course and assessment items within the course. In this instance it appears that the wiki merged seamlessly into the course in such a way that it became “invisible” to the students. It became a tool for the students to achieve assessment tasks much like a computer becomes an “invisible tool” in the completion of this article.

The final modification to date occurred last year and involved further minor modifications to the assessment criteria in relation to how the wiki was to be graded. The basic intent of the wiki remained the same as it had in 2009. The 2010 offering of the course was highly satisfying for both me and the students. For the first time the course exceeded expectation and received a high ranking. Majority of feedback was highly positive commenting that the course was engaging, relevant, exciting, informative, and provided clear and fair assessment expectations. The wiki wrangles and wrestles were untangled as the wiki became an authentic assessment task that was scaffolded via a blended learning mode.

## **Future Directions**

The previous sections have outlined an iterative, reflective practice in relation to use of a Web 2.0 technology in my course over 4 years. I reflected how my wiki assessment practices evolved based on student feedback and my own teaching reflection for the improvement of student engagement and learning. What does this personal experience teach us in relation to embedding Web 2.0 technology into undergraduate university courses? This question is addressed via the two key journal topics, namely the interaction between the social and technical dimensions of Web 2.0 technologies and how pedagogies might be transformed via their use.

### **What are the interactions and links between the social and technical dimensions of emerging technologies as educators wrestle to integrate them into higher education curricula?**

The motivation to use the wiki in the course in question was an intrinsic one as there were no explicit university instructions that I utilise this tool. My use of a wiki was driven by personal interest in integrating various ICTs in student’s learning (primarily as a means of improving learning in a course about multiliteracies) I was willing to experiment with the technology. My starting point with the wiki was a consideration of its capabilities and the exploration of possible learning experiences which could be constructed around it. The Blackboard wiki did not support the creation of complex Web design, but did provide a simple tool interface where text can be inputted, images uploaded, pages created and links added. The wiki provided the functionality of sharing and uploading, within a visual interface, and this was primarily how I used the technology. For my limited

purposes, the technical dimension of the wiki caused only minor issues with the students. What did appear problematic was the use of the wiki in relation to two social dimensions of the course; the issue of group work and student motivation to learn when such learning was not directly related to an assessable task.

The first iteration of the wiki dealt with students contributing content to their group wiki. Students found this task frustrating as they had to rely on others to make a contribution to which they could respond as part of their assessment. This group task could have been improved by providing clear expectations of what was expected from each group member; however, I opted for the individual wiki option in the next iteration of the task, as I felt this would be a more satisfactory experience for the students. Even though Web 2.0 technologies afford group collaboration, I find that the nature of student assessment at university tends to involve them working individually (see Carr, 2008). Student motivation to complete the wiki was directly related to the degree to which the wiki was an assessable item. In early iterations the wiki was almost an additional extra and so the students were not prepared to invest time and energy into learning as this was only a minor component of an assessable task. This attitude changed once the wiki became a principal component of assessment.

The observation that students determine the level of their engagement in proportion to the level of assessment is not a new phenomenon. What perhaps is new is that the choices they make have implications for the role of Web 2.0 technologies in blended and online environments. If students are to achieve success in increasingly ICT mediated environments they will need to engage with the technology. Such engagement will only occur if the use of ICT is embedded in authentic, assessable learning experiences.

### **What are the implications for social repression and/or transformation of pedagogies as educators wrangle with emerging technologies to support learning and teaching?**

The course transformed over the four years as the wiki became integral to student learning. Because of the nature of assessment and the demands of the group work for first year students, individual assessment was determined as the most advantageous; however, the requisite for sharing and uploading was still relevant to the task. The wiki allowed for this and the key challenge became the implementation of features which made the task meaningful for the students. These features were a meaningful learning context and scaffolding of learning experiences (Frederickson et al., 2005).

In relation to the provision of meaningful contexts for learning, the later iterations of the wiki became a meaningful task as it became a key feature of the course and an assessable item rather than an extraneous element which constrained students' time for no immediate reward. The weighting of the wiki task was also increased to be proportionate to the student effort required for the completion of the task and was also consistent with the outcomes expected for successful student learning in the course. Students were creating multimodal texts to support learning and the wiki supported this learning. Because workshops were allocated to the creation of the wiki, students were also engaged with the task as they perceived this as an appropriate use of their time. As noted previously, Selwyn (2007) suggests that the current generation of students are highly strategic in their allocation of time and determine thoughtfully how and when effort will be expended in their various university courses. If technology use is seen as ad hoc or extraneous it is unlikely that students will engage in a learning task which is not directly related to



assessment. My decision to change the wiki task from an out of class, minor activity with minimal assessment implications to a workshop task related to the major piece of assessment obviously increased student motivation to engage with the technology as it was now perceived as a useful element in their learning.

As a result of the redesign of the wiki task to become a workshop task, the opportunities for me to scaffold the student learning during the workshops were increased. I also developed online resources (e.g., screen grabs instructions, short instructional movies, templates for completion, completed example) to support the learning during the workshops. As a result of the provision of online resources, my pedagogy changed from being a demonstrator of the software at the teaching computer to a guide that supported individual students when they required help. The demonstrator pedagogy did not cater for the variety of student ICT skills in the class, leaving some students to wait for the next instruction as I helped others who could not keep up with the pace of instruction. The provision of detailed instructions online, which catered for a variety of ICT skills in the class, allowed for the students to work on their wikis at their own pace and for me to provide learning which was “just in time learning” rather than “just in case learning.” This chance for students to learn how to use the technology at their own pace and in authentic ways, to work collaboratively on designated tasks, to share their work with others, was a rewarding experiencing for both the students and myself.

## Conclusion

This article has provided an account of the use of a Web 2.0 technology, in this case a wiki, in a first year university course. The use of the wiki, in conjunction with changes to my pedagogical approach, was instrumental in modifying the student learning experience and in so doing improve the quality of the course. One external indication of success in this endeavour was the improvement in the SEC scores which moved from just above average (4.1) in 2007 to a high performing course (6.0) in 2010. A less obvious, but just as important reward for wrestling with the technology was my personal development as a lecturer over this period of time who was able to more successfully integrate the wiki, and other technologies, into my pedagogy.

The wiki assessment task changed from being perceived as an additional unpleasant course requirement, to an “invisible learning tool” that supported student learning in the course. The wiki was used as a vehicle for student collaboration throughout the course experiences. It became an assessment item that supported formative and summative assessment practices which were tightly linked with the objectives of the course. The Wiki task supported a blended mode of instruction; online resources were available which facilitated students working at their own pace and which deepened student understanding of multimodal texts.

Wrestling and wrangling with technology to assist student learning is not an overnight or even a short term task. The learning how to use the technology in a technical sense is relatively easy for many lecturers (and students), the learning how to use the technology to support authentic student learning is a different beast. It has taken four years to fully negotiate the complexities of introducing a new technology into the learning mix. It is only now that I feel the success of my endeavours and am reaping the rewards in terms of my satisfaction with the improved opportunities for student learning the wiki has provided. Of course there is no rest in terms of these technological endeavours; a move to a fully online environment is calling. I anticipate many more rounds of wrestling, a significant

new level of wrangling, in a limited sense with the technical aspects of the technology and in a substantive sense with the challenges this will bring to my pedagogy, before I again reap the rewards of a thoughtful pedagogic utilisation of technologies with implications for student learning.

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