Wikis as an Alternative to Classroom Based Groupwork

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Abstract

This research investigates the potential for using a virtual learning environment and in particular wikis as an alternative to face to face tutorials. From a pedagogical perspective groupwork and problem based learning provides a teaching/learning environment which allows students to discuss and explore ideas whilst benefiting from direction and feedback from an e-tutor (Savin-Baden, 2000). This facilitates the opportunity for reflective learning with the goal that a student can develop a better understanding of the material. However, there have been some difficulties observed with face to face group work that may be alleviated, at least in part by using a virtual learning environment.

The paper explores the results of a blended model of group work. ‘Blended’ refers to a teaching model which includes both face to face sessions and online time via the internet with the same cohort of students. A wiki1 was used to facilitate the students in exploring one topic in depth through uploading relevant resources and their comments. The wiki environment was observed by the e-tutor on a weekly basis to ensure that all students participated and there was an opportunity for the e-tutor to give feedback in class that same week. The advantages and disadvantages of face to face and virtual environment discussions were evaluated by the students and teaching staff after a ten week period. This paper presents the findings of this exercise from both the perspective of the tutor and the learners. It was a beneficial exercise for the students as it enabled easier, more frequent contact with group members which made the gathering of materials for the assignment quicker. It resulted in a repository, generated by the students, of highly relevant materials stored online that could be accessed 24/7. It assisted the e-tutor in monitoring and evaluating individual contributions to the group exercise on a continuous basis and allowed the e-tutor the opportunity to encourage non participants to engage with the activity.

Keywords: Accessibility, Assessment, Groupwork, Wiki

1 A wiki is a web based tool used to create web pages collaboratively.
Introduction

Universities, particularly those who operate distance learning courses, have been active in investigating the possibilities of using a virtual learning environment (VLE) to support and enhance the level and quality of teaching that is offered to students (see Ingirige and Goulding, 2009). Research undertaken on the benefits of VLEs in an education context has been international. It has also involved a variety of disciplines from linguists (Polisca, 2006) to the medical profession (Boulos et al., 2006). VLEs have been used in recent years for the submission of coursework, which allows a student to upload work for assessment purposes and for a tutor in another location to almost instantaneously download and mark the same assessment.

Asynchronous learning tools such as downloadable resources and emails have allowed student support and mentoring to be easier and more frequent. This paper relates to the next generation of Web 2.0 applications, which includes wikis, blogs and podcasts. These have been referred to as ‘mind tools’ (Jonassen et al., 1999) facilitating constructivist approaches to teaching by allowing collaborative research to yield benefits such as enhanced problem solving skills. Problem solving skills are a key attribute that must be developed within students in the built environment especially in the current rapidly changing economic climate.

Wikis provide a flexible tool as it is a web publishing tool that allows the students to create their own web pages. These can include links to other websites, embedded pdfs and allow notes and comments to be posted on the content of the resources that have been uploaded. All those who have access to the wiki can see and edit the content, and these activities can be synchronous or asynchronous. This allows the students to create a knowledge base that is the sum of their contributions and to be actively involved in their learning experience.

One of the unintended benefits of using online collaborative software is that an e-tutor can track articles and findings being uploaded gradually which minimises the opportunity for large amounts of text to be added that are not referenced or are copied and pasted from ‘dubious’ sources. This addresses one of the concerns raised by Patrick (2008) about the perceived misuse of electronic resources, particularly Wikipedia, in student work.

The aim of this paper is to demonstrate through a case study of one cohort of students the limitations and the benefits of using a wiki to conduct group coursework. By examining the experiences of the students it is possible to evaluate how wikis can be used most effectively as both a teaching and an assessment tool.

Literature Review

There is an acknowledgement within pedagogical literature that there has been a shift towards using e-learning as a teaching method (Harasim, 2000). As Oliver (2005, p.175) states in his paper on quality assurance ‘E-learning is a form of educational
delivery that has become quite prominent in universities worldwide and an activity that, to all intents and purposes, can now be considered mainstream.\cite{rosec02} It has also been well documented\cite{rosec02} that e-learning has limitations as well as advantages for both the education provider and the learner. One key aspect that is highlighted is the need for higher education to ensure that social skills and a greater awareness of body language are developed through role playing activity and this may not be possible through sole use of a VLE. This paper investigates a blended model allowing the relative merits of both to be considered and focuses on student feedback in an effort to gauge if it is a student-centred approach which widens accessibility to learning or if it actually makes learning more difficult.

Using a VLE often necessitates that the student is involved in more independent learning time and this increased autonomy and ownership of the learning experience often produces enhanced results\cite{polis06}. A wiki, whilst it is a group effort, also encourages the development of some of the same transferable skills as independent learning\cite{polis06}. Dillenbourg\cite{dill09} highlights the difference between collaborative work that is done together and co-operation that may involve a division of labour and then the work is pasted together. As Kittle and Hicks\cite{kitt09} state genuine collaboration goes beyond inputting one or more sections to a combined piece of work, it involves creating, debating and critiquing the content within the group so that the final product has been considered at length by all members of the group. A wiki makes this task possible and allows the e-tutor to identify how the work is being produced. It has the advantage that materials and comments are gathered together online creating a central repository of uploaded documents and comments rather than the task being divided as may occur in a traditional group setting. Working on a task online in a group setting involves synchronicity and a wiki has the advantage of allowing communication to be both synchronised and asynchronised; it is possible to upload material at any time. It acts as a repository and a discussion forum. A wiki is a more flexible learning tool compared to existing asynchronous tools such as a discussion board. It is aptly defined by Leuf and Cunningham\cite{leuf01} as ‘a freely expandable collection of inter linked web pages, a hypertext system for storing and modifying information – a database, where each page is easily edited by any user’.

Bartolo\cite{bart08} a lecturer in Sydney, Australia, gives some insights from a lecturer’s perspective on using wikis and sees them as a good ‘bulletin board’ for students to upload their thoughts and resources on a week by week basis. He stresses the importance of ensuring that the students are comfortable with the technology and has noticed that some peer mentoring takes place from those who are more familiar with using wikis socially. Bartolo’s research finds that wikis work best in conjunction with face to face sessions and effectively take the learning experience beyond the classroom. He states the need for frequent contact with the students to encourage them to participate and also to give them weekly tasks to motivate them to go online.
before class. Al-Kilidar and Johnson (2009) have related the use of wikis to increased performance in assessment and see the benefit of explicitly using a wiki as the basis for an assessed piece of work as in this paper. For successful implementation of wikis, particularly if related to assessment, it is important that all facilitators are familiar and comfortable with the technology. As Molyneaux et al. (2009, p.393) state ‘buy-in by all facilitators is vital’, this is also observed by Cochrane et al. (2008) who indicate the importance of a healthy community of users including both staff and students.

In recent years there has been an increasing number of papers written on why we should integrate wikis into our teaching/learning strategies but few empirical findings on implementing these technologies. Choy and Ng (2007) offer some insights into the barriers to the effectiveness of wikis through empirical research, raising issues of critical mass of users, the need to propose an authentic task and the changing role of the lecturer from an ‘authoritative instructor’ to a ‘mediated facilitator’. These are interesting findings when applied to the case study for this paper as the role of the e-tutor was light touch and this worked well as it coaxed everyone to participate in a gentle way as their online activity could be monitored. The task was authentic and the wiki environment was an appropriate tool for the task as it allowed students to participate as a group. Many of the resources being collected and discussed were available online so it made sense to link to these in a virtual environment. Many of the problems that were encountered by Choy and Ng (2007) are similar to those experienced in this study. Students were not comfortable with a new learning interface despite tutorials to teach them the basic skills required and despite the fact that many of them already possessed a relatively high level of IT competence. However, it helped that the existing platform used in the University of Ulster, WebCT could accommodate a wiki application which is called Confluence.

There is a wide range of academic papers focusing on the use of VLEs in further and higher education in pedagogical literature. However, there are two distinct ideas that focus on the use of wikis in a VLE that the author wishes to investigate through this paper. Firstly, through a case study of student feedback is it possible to evaluate the learners’ response to using a virtual environment compared to face to face group work? Secondly, to evaluate if a wiki enables the tutor to assess the individual contribution of each student in the group and to confirm that there was similar effort from each student.

Rationale for using a wiki in teaching

There are difficulties observed with face to face group work that may be alleviated, at least in part by using a virtual learning environment, such as the need for appropriate physical space to be made available to facilitate discussions and an awareness that not all students are equally comfortable in sharing their opinions orally in a group setting. Group work necessitates students being available to their colleagues at a time which suits all and can hinder the creation of a more flexible learning environment for those
with work and family commitments particularly part-time or mature students. There are also the difficulties in assessing individual contributions to group work discussion in an equitable way. It therefore seemed appropriate to use a VLE to minimise these potential difficulties as the technology could be used as a lever for a more flexible and comprehensive teaching and learning environment. The wiki used as part of a blended model within the overall teaching strategy for the course, attempted to embed the seven principles of good practice as identified by Chickering and Ehrmann (1996). These are listed below:

1. Encourage contact between students and faculty
2. Develop reciprocity and cooperation among students
3. Use active learning technologies
4. Give prompt feedback
5. Emphasise time on task
6. Communicate high expectations
7. Respect diverse talents and ways of learning.

The extent to which these seven principles were achieved is evaluated later in the paper. Wikis offered two advantages over potential tools. They allowed students to upload links to relevant materials as well as commenting on postings by colleagues on the same website. This suited the task and offered the ability to widen access and participation for students who had to complete a substantial element of groupwork whilst combining living off campus, working and/or family commitments. The intention was to create an effective small group approach to teaching delivery. This would facilitate in depth discussion under the tutorage of a member of staff but ensure that all students contributed equally within their designated groups to the tasks. The output was assessed as part of the students’ final award.

Case Study

The class consists of 13 students at Masters Level, Level 7 according to QAA (2008) Framework for Higher Education Qualifications. They meet on a weekly basis for directed tutorials in a face to face environment and communicate on a weekly basis with each other through a wiki in a virtual learning environment (VLE). The students had been at the university for four years and were competent in using WebCT to download lecture notes. Some of the students, although they were all familiar with the internet, had no prior knowledge of wikis or creating web pages. The students received introductory sessions entitled ‘What is a wiki?’, ‘How do I use a wiki?’ and ‘Uploading materials to my wiki’. These were also made available as podcasts to allow students to access them as a reference tool. The students were familiar with their colleagues and had been used to working in small groups and submitting group coursework throughout their university career. The group consisted of five female students and eight male students. All students had easy access to the internet on campus. The students
elected which group they wished to be part of and three groups were created, one
which only consisted of females (A) and two groups that were male (B) and (C). The
three wikis were on different topics and were private. Access was only available to the
group members and e-tutor. The students had class together as a group once a week
and the lecturer was able to access the wikis earlier in the week before class and follow
up if there were concerns regarding the content or frequency of students’ postings. The
students were aware that they were being monitored.

The wikis were set up and students were encouraged to use this as a method to upload
and discuss relevant materials on their topics on a weekly basis and, in essence, to
use it as a repository, which formed the materials for their written group assignment to
be handed in at the end of the semester. In this case, as the wiki was being used as a
learning tool it was important that all sources were accredited and the wikis were also
made private within the WebCT environment so that the content was only generated by
the students in the group. The students who were studying planning and property
development chose a recent relevant government policy such as Ecotowns that was
currently being implemented. For the assessment each group had to write a discussion
paper in the style of an academic journal article, critiquing the effectiveness of the
current policy and offering any recommendations for future policy development.

The assignment in question used the wiki material but the final submission was word
processed and submitted in hard copy. This meant that in some groups the work was
divided into sections and effectively individual contributions were made in sections and
then merged together rather than being a true collaborative effort. An option for further
development of this element would be to insist that a group paper be written and
changes tracked online which would allow the tutor to see the individual contributions.
This raises complex ethical and technical issues surrounding collaborative writing and
authorship (Kittle and Hicks, 2009).

From the tutor’s perspective
The creation of a wiki environment for each of the student groups would have been
considerably more difficult without the technical support of the Centre for E-Learning
Technologies at the University who assisted in the set up and delivery of introductory
tutorials for the students. This element is the most labour intensive part for the lecturer
in introducing wikis as it needs to be well prepared and conducted in advance of the
beginning of the module. Once set up was complete, it was not complicated to monitor
or edit the wikis, they are user friendly and the wikis used were embedded as an
application within the platform which facilitates other online teaching activities in the
University of Ulster, WebCT. The e-tutor allocated one hour per week to monitor the
activity of the three groups and to post comments as necessary. Wikis were effective in
reducing the need for space for group discussion and enabled one tutor to engage with
three separate groups in a virtual environment. As the students were in class at
another time during the week and delivery was blended it was possible for the tutor to
give feedback or to answer any concerns regarding the wiki in a face to face environment too. It is also important to note that the students were in their final year and then arguably not seeking as much guidance so making suggestions, monitoring and occasionally investigating the reasons behind infrequent postings was not an onerous task. However, this may not be the situation if wikis were to be used in earlier years when perhaps more guidance and direction are necessary or if the VLE was the sole teaching environment. This would require an increased time commitment for online communication by the e-tutor.

From a teaching perspective it was informative to see which students communicated better in a VLE rather than a face to face environment although there were several students who appeared strong in both environments. The students were not allocated any marks in their assessment for online contributions in this instance. A small amount of marks could be assigned in future to encourage good participation but as this is a Level 7 module and is important for the final classification it seemed a little wasteful of assessment marks. As these students were the first cohort to complete this module it was not possible to identify if there was improved performance due to the wiki. However, the students engaged well with the task early in the semester, which enabled further time for reflection on the materials being gathered. It provided a quick and easy way to assess how students were engaging with the task and each other and gave a good indication of progress made with the assignment on an ongoing basis. This research is based on a small group making it difficult to draw any firm conclusions but it was interesting to observe that the female group were noticeably more active from the start on the VLE and were keen to engage in the activity compared to the other two groups who were male with whom it seemed less successful.

**From the students’ perspective**

This feedback has been gained through discussions with and submissions made by the students themselves. The students were aware that they were the first students in Ulster to use a wiki as a teaching tool and were enthusiastic about trying something new, the novelty of being ‘first’ appealed to this group. Feedback from the students about the merits of using a wiki varied across the different groups. Group A were the most frequent users and welcomed the flexibility of being able to access their wiki from home as they lived in different accommodation during term time. Group A were very active at the start uploading a wealth of relevant material in a short space of time. One observation that was made was that it was difficult to distinguish/prioritise material if there was too much uploaded on to the wiki without creating a series of pages and managing the material. Group A suggested that they would have liked to have been introduced to wikis earlier in their university career so that they could use the higher functions of cataloguing and organising data and resources by creating a series of pages. Group B were slow and steady and uploaded material on a regular basis but in small quantities.
Group C noted one of the key benefits was that ‘information could be easily shared and stored on the wiki’ and this reduced the level of repetition between all members of the group and the ability to accumulate a wide range of relevant sources in a short space of time. The biggest advantage noted by this group was the ability to communicate without needing to be physically present in the same place at the same time. However, at an early stage Group C did not appear to be using the wiki and the e-tutor questioned if there was a problem with the technology or if additional support on how to use the technology was necessary. The problem seemed to be mainly a question of accessibility for this group, three of whom who lived together and did not have online access in their rented accommodation. Groups B and C also pointed out that they also needed face to face sessions as some things got ‘lost in translation’ and wikis could be quite ‘informal’ and group members preferred to discuss issues and opinions in person.

In returning to Chickering and Ehrmann’s seven principles for good practice (1996) it is possible to evaluate the relative success of the wikis in this case study and to suggest some areas were there is the potential for improvement.

**Table 1: Mapping Chickering and Ehrmann’s Principles for Good Practice to the Case Study**

<table>
<thead>
<tr>
<th>Principle</th>
<th>How this was achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Encourage contact between students and faculty</td>
<td>Verbal feedback provided in class but it may also be useful for the e-tutor to take a more active role in commenting in the online environment.</td>
</tr>
<tr>
<td>2. Develop reciprocity and cooperation among students</td>
<td>This worked to some extent in allowing students to leave resources and messages in a 24/7 private environment but some students still preferred a face to face environment.</td>
</tr>
<tr>
<td>3. Use active learning technologies</td>
<td>The wiki was successful in ensuring that all students participated in uploading documents and contributing to the postings and there were no ‘passive’ group members.</td>
</tr>
<tr>
<td>4. Give prompt feedback</td>
<td>As with 1. a stronger online presence would have increased this aspect but accessing the wiki on a weekly basis gave the e-tutor a clearer understanding of how the groupwork was progressing than is often possible in a traditional classroom setting.</td>
</tr>
<tr>
<td>5. Emphasise time on task</td>
<td>The students all agreed that this was a quicker, more effective and flexible way to collect together a repository of relevant, critiqued resources that provided the foundational materials for their assessment.</td>
</tr>
<tr>
<td>6. Communicate high expectations</td>
<td>This was possible through setting a discussion paper that used the materials gathered. The wiki was set up as a formal forum for collecting and disseminating group information for an assessment.</td>
</tr>
<tr>
<td>7. Respect diverse talents and ways of learning</td>
<td>This is perhaps the most difficult principle as in respecting the diverse ways of learning within a group setting as with traditional methods, a virtual environment does not suit everyone’s learning style. By introducing both a face to face and a virtual element to a teaching environment it is anticipated that the teaching/learning strategy will facilitate a wider range of talents and allow students to identify for themselves their own personal preference and learning style.</td>
</tr>
</tbody>
</table>
Conclusions

Did it work? As with all teaching and assessment methods it worked better for some students depending on preferred learning and communication styles. The key to participation in the activity was ensuring good online access for all group members, activities to build confidence in using a new application on the VLE and a task driven approach that required the participation of all members of the group.

An important finding was the ‘niche’ role of the wiki in terms of the level of communication that the students desired. An online environment was efficient in gathering the information and allowing initial discussion to take place on line but all groups preferred to form arguments and frame thoughts in person once everyone had had an opportunity to review the material that had been gathered on the wiki. It appears that the wiki was good at providing a repository of information on a topic and initial discussion but more contact in person was preferred when the group was reflecting on the material and synthesising responses for the written assessment. This may be due in part to the lack of familiarity of students with collaborative work that is solely online and with more practice they may not revert so quickly to face to face discussions. It does however seem that students make a distinction between formal and informal environments and are familiar with online discussion in social networking sites but if it is an assignment for assessment they prefer the more traditional methods of study, meeting face to face and composing the document offline.

The conclusion reached by the author is that it provides some benefits that other teaching and assessment techniques do not by allowing a tutor to be aware of engagement and contributions of individuals early in the semester. This gives the opportunity for encouragement and guidance and formative feedback before an assessment is due. The assignment in question used the wiki material but the final submission was word processed and submitted in hard copy. Whilst it enables the e-tutor to monitor activity throughout the process it does not necessarily give the same level of assurance as an examination or individual coursework in determining individual effort, however, it is possible that a tracked online document for submission would allow this level of detail. This study demonstrates that wikis were successful as part of a blended model where teaching delivery is a mixture of face to face and online activity, and groupwork assessment was strengthened by using wikis.

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References


