

Scaling up wiki-based blended learning environment

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1. Introduction

Since their introduction in the mid nineties, the use of wikis in education has been extensively studied (Bruns & Humphreys, 2007; Forte & Bruckman, 2007; Mindel & Verma 2006; Richardson 2006), debated and documented (see examples of educational wikis and related discussions at Atlassian, c2, Wikispaces, and Wetpaint websites). More and more higher education institutions are experimenting with wikis, aiming at increasing students' engagement and communications and leveraging on "collective intelligence" in curriculum design and delivery.

The research presented in this paper extends the work already piloted on using wikis as a framework for blended learning (Cubric, 2007). The focus in the original work was how to "plan, shape & enforce" wiki learning activities (Lund and Smørdal, 2006). The main outcome was a definition and evaluation of a blended learning process supported by wikis (see Figure 1 below).

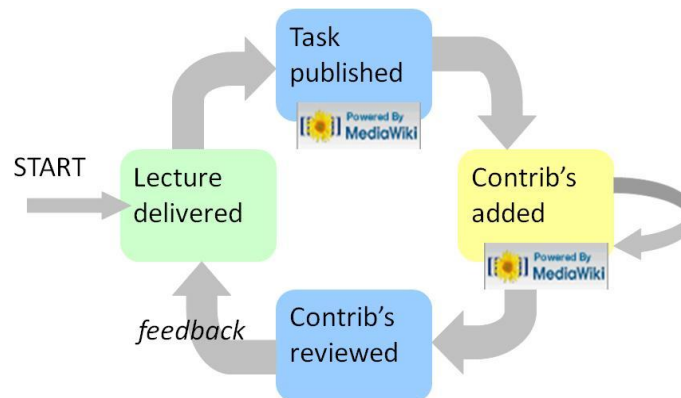


Figure 1 Blended learning process supported by wikis (Cubric, 2007)¹

The main objective of this research was to further examine to what extent wikis can support student learning and improve the quality of their work, focusing on:

- Scalability (How to use wikis in large groups?)
- Diversity (How to use wikis in teaching different subjects, with different study levels, and different modes of study ?) and
- The role of the teacher (What role should the teacher assume in a blended learning environment?).

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The data for this study have been collected from the two trials set up in the University of Hertfordshire Business School over the last two academic semesters (January 2007-January 2008). The trials included two postgraduate and eight undergraduate modules, five different subject areas (marketing, accounting, economics, management sciences and information systems), varying student group sizes ranging from 21 to 182 students, different modes of delivery (e.g. on-line modules), different assessment strategies (not assessed, assessed contributing towards 10%-30% of the final grade), and different wiki engines (proprietary UH "StudyNet" wiki and open source "MediaWiki" platform). The data collected from the trials include: student responses to purposely built questionnaires, students' reflections, tutors' reflections and various usage statistics available on the MediaWiki and UH StudyNet sites. The preliminary results of the first trial have indicated some areas for intervention and improvement in the second trial, in particular the following:

- Strong correlation between students' engagement and assessment (student contributions were insignificant in modules that were not assessed)
- Strong correlation between student engagement and regularity/quality of feedback (student engagement was increased in modules where tutor acted as an active reviewer)
- Strong correlation between students' engagement and final results (all significant contributors passed the corresponding modules, and none of the students who failed had made any contributions to the module wiki).

Other findings from the first trial can be summarised as follows:

- Effective use of wikis in large groups (more than 30 students) should be based on the group work assessment and enhanced with sporadic individual feedback
- Assessment of wiki work should not be different than any other assessment; additional assessment criteria are related to presentation and collaborative aspects of the work
- Collaborative writing is not easy for students but could improve as the module progresses, based on tutors' interventions and guidelines
- Some (but not too much!) "scaffolding" is necessary e.g. providing students with guidelines, feedback, examples of literature reviews, NPOV
- Tasks should be introduced gradually in the order of increasing educational competencies, as in for example, Bloom's taxonomy levels (Bloom, 1956)
- Main problems were related to late registration of students and the significant impact on tutor's workload.

In subsequent sections, we describe, evaluate and compare six selected case studies from the UH Business School trials and we conclude with a summary of the main findings related to: blended learning environment and activities for large groups, differences amongst learners and role of the teacher in the blended learning environment.

2. Case studies

In this section, we summarise six case studies carried out in the University of Hertfordshire, based on the different learning and teaching objectives and we

conclude with the comparative analysis of obtained data. The Appendix A contains more detailed description of the selected case studies.

2.1 Monitor group functioning

Wikis have many uses in a learning environment, not least as a tool for collaboration, especially in a large group setting. With this in mind a StudyNet based (University of Hertfordshire's Managed Learning Environment) wiki was used on a level two undergraduate module in Retail Marketing. It was implemented to monitor group functioning and individual contributions to the group task to ensure parity and transparency. The idea of using a wiki was to embrace technology to measure something that is typically difficult to assess effectively.

2.2 Support collaborative learning

The objectives of introducing the wiki to this level two module in Project Management were to provide an additional method for students to engage with the module and for lecturers to formatively assess learning, to encourage collaborative learning amongst students and to provide additional feedback to students.

2.3 Develop learning communities

A wiki (using MediaWiki software) was adopted within a Postgraduate module in Corporate Finance. The objectives were firstly to encourage the students to develop a learning community, which could accommodate the needs of part-time (non-campus based) students alongside full-time students, and secondly to encourage the students to take a more active role in their learning. In addition the wiki was also a way of giving ongoing feedback to the students with respect to academic sources of information and the development of critical evaluation skills.

2.4 Foster students' learning autonomy

Innovative processes like trying collaborative platforms (wikis) have the potential to impact both the target audience as well as those that administer the process. This was certainly the case for the tutor of the module of Business Economics level two and its students. The implementation of wikis within the coursework was motivated by three specific goals: to foster the students learning autonomy, to create a tool for revising for the exam, and to improve exam results from the previous year. Aiming to minimize the foreignness of the wiki application, it was adopted the wiki platform managed by the University of Hertfordshire –“StudyNet wiki” since the students were already familiar with its interface.

2.5 Share reading and learning

As wikis are increasingly being used in business to share knowledge, it was decided that using a wiki would be a good experience for students taking a level two module in Operational Research. The module is of a quantitative nature and in the past,

students did very little reading around the subject. The aim of using a wiki for this module was for students' to read more widely about Operational Research, share their learning with others on the module and learn wiki technology to enhance their employability.

2.6 Support distance learning

There were two groups of students involved in distance / blended learning Business Intelligence Online two semester modules. As part of the distance learning material there are a series of exercises which are either to read an article or to complete self assessment questions. Previously the students had done this and received comments by the email based discussion forums on the modules' website.

In order to be able to give better feedback and to initiate class discussions it was decided to make use of the wiki to enable a freer flow of material.

3. Comparative Data Analysis

In this section we summarize the cases (Tables 1-3) and provide comparative analysis of the data collected through the purposely built questionnaire (see Appendix B).

Table 1 General characteristics

Case#	Aim	Subject	Level	Number of students	Student contributing regularly*
2.1	Monitor group functioning	Retail Marketing	2	84	77%
2.2	Support collaborative learning	Project Management	3	182	<10%
2.3	Develop learning communities	Corporate Finance	Masters	33	88%
2.4	Foster students' learning autonomy	Business Economics	2	106	65%
2.5	Share reading and learning	Operational Research Models	2	70	82%
2.6	Support distance learning	Business Intelligence Online	3	21	29%

Table 2 Learning activities and assessment

Case	Wiki learning activities	Group or individual access?	Wiki work assessed ? (weight%)	Tutor's role
2.1	<ul style="list-style-type: none"> Meeting minutes Sharing research Progress reports 	Group and individual	15%	Monitoring group functioning
2.2	<ul style="list-style-type: none"> Literature review Glossary Coursework FAQ Nominate topic for the revision lecture Exam revisions 	Tutorial Group	No	Facilitator
2.3	<ul style="list-style-type: none"> Literature review Theory discussion Discussion of past examination questions 	Individual	10%	Active with regular feedback given
2.4	<ul style="list-style-type: none"> Topic analysis Literature review Module glossary 	Group and individual	30%	Active with regular feedback given
2.5	<ul style="list-style-type: none"> Module glossary Bibliography Literature Review Discussion topics Coursework development 	Group access	15%	Facilitator
2.6	<ul style="list-style-type: none"> Literature Review Peer reviews 	Individual	5%	Facilitator

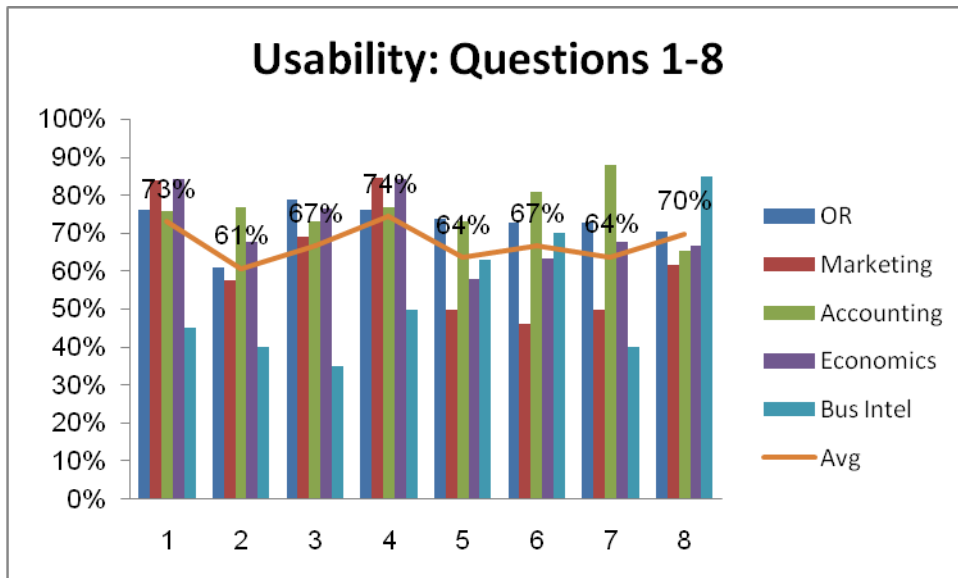
Table 3 Type and availability of collected data

Case	Questionnaire Responses	Students reflections	Tutor reflection	Wiki site data availability
2.1	Yes (26)	Yes (12)	Yes	Yes – only for UH access
2.2	Yes (7)	Yes(4)	Yes	NO – only the HTML archive*
2.3	Yes (26)	Yes (9)	Yes	Yes – only for UH access
2.4	Yes (31)	Yes (31)	Yes	Yes – only for UH access
2.5	Yes (38)	Yes(4)	Yes	Yes
2.6	Yes (20)	Yes (17)	Yes	Yes only UH access

For the purpose of comparative analysis of data, shown on the graphs below, the questions from the questionnaire (Appendix B) are grouped into the following themes:

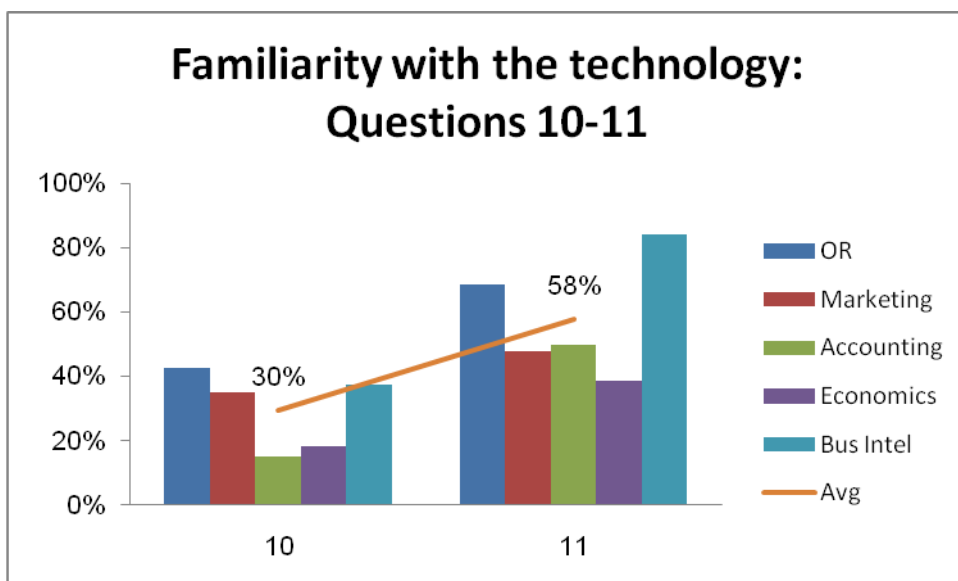
- Usability (Q1-Q8)
- Familiarity with the technology (Q10-Q11)
- Tutor's support (Q12, Q13, Q22, Q25)
- Learning benefits for students (Q14-Q20)

- Students' satisfaction (Q26-Q29).

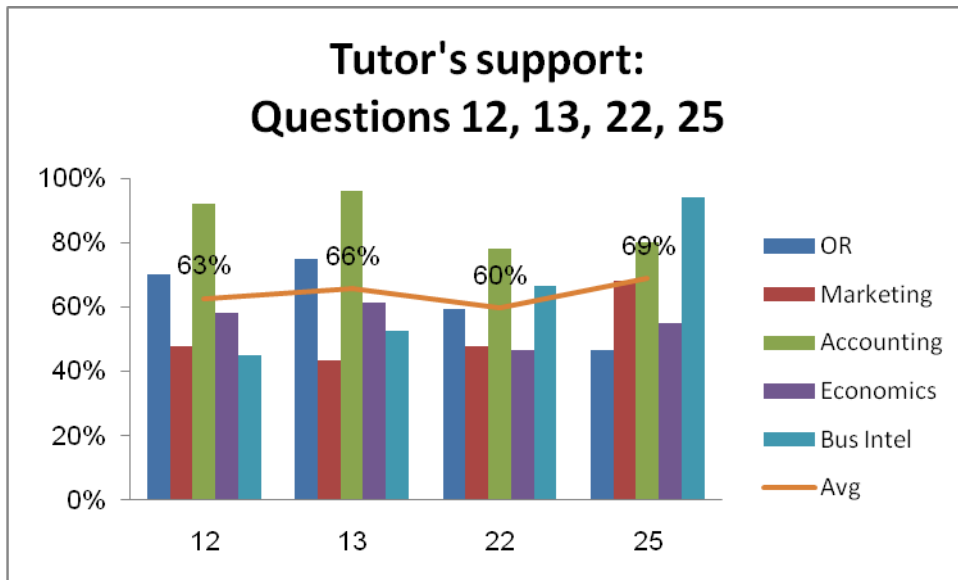


The “Usability” graph shows that majority of students find the wikis easy to use, easy to learn and easy to access. The only exception is the Business Intelligence(on-line) Module (case 2.6) where students had difficulties with remote access and the speed of Internet connections.

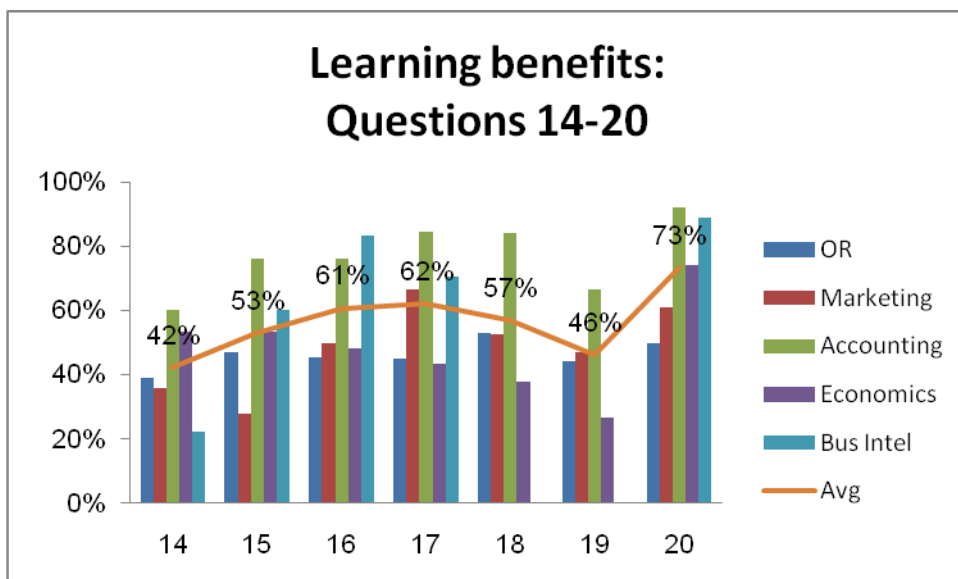
In contrast, only a relatively small percentage of students have heard of (average 58%) or used wikis (average 30%) before (see “Familiarity with the technology” graphs below). As shown by the “Usability” graphs above, the lack of familiarity with the technology did not hinder the students’ ability to use wikis.



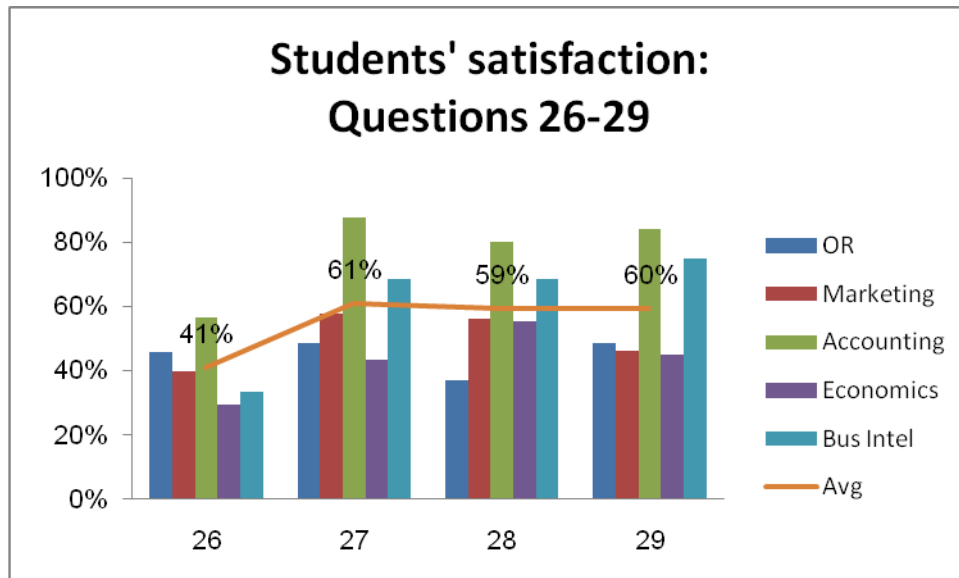
An average of 63%-69% of student find the instructions, support and feedback from tutor to be useful in helping them in their learning (“Tutor’s support” graphs below)



The learning benefits as perceived by students (see “Learning Benefits” graph below) vary significantly for different modules. While this is relative to the type of learning activities used in the specific module, it shows that majority of students see the main benefit as being the ability to read and review the work of other students and that the least beneficial element is the support in preparing for other types of coursework.



Student satisfaction was related to the questions on whether or not they would use wikis without assessment and whether or not they would recommend use of wikis in future. The responses again vary for different modules, but the average responses show that students engagement is highly linked to the assessment and that their overall satisfaction is related to the level of tutor support (e.g. compare figures for “Tutor Support” and “Students’ satisfaction”).



The limitations of this methodology should be acknowledged regarding the small numbers involved in some of the case studies (case studies 2.3 and 2.6) and the relatively low level of responses (case studies 2.1, 2.2 and 2.4).

4. Conclusions

In this section we summarise the findings and recommendations from all tutors involved in the trials.

4.1 Blended-learning environment for large groups

When there are large numbers of students, the tutor has to create wiki groups with a manageable number of students. The optimal number in a wiki group depends on the nature of the task being set.

If the intention is to have the students write collaboratively about a particular topic, it is useful to have groups with no more than four or five students. Case study 2.4 mentions the challenges of having a wiki group of 12 to 16 members engaged in collaborative writing.

In other contexts however it might be appropriate to have wiki groups that correspond to the tutorial groups (provided that these are evenly distributed), and even have a group involving the entire class.

In case 2.2 for instance, the wiki was used on a class-wide basis (182 students) with the intention of providing additional resources and support to the group through creating a shared knowledge base and providing additional input and feedback from lecturers. Tasks were not assessed and thus engagement with the wiki was low.

By requiring each group to add weekly contributions to the wiki, as in case 2.5, students were able to share reading and learning with the entire class. Group members were allocated to the same tutorial to aid communication within the group and to facilitate discussion on their contribution to the wiki. All wiki topics were based on the lectures and linked to the examination. The overall wiki contributions were assessed as a group and each member of the group was awarded the same mark.

On the issue of parity students often complain about the unfair nature of group work (Petress, 2004). Case study 2.1 discusses the benefit of being able to use the wiki to measure individual contributions in a group setting. It is not a time saving tool but the transparent nature of the wiki should lead to greater collaboration and individual accountability and should enhance the students' perception of the equity of the assessment of group work tasks.

4.2 Blended-learning activities for large groups

As it is noticeable in the case studies, wiki platforms might be used for a variety of tasks inside and outside the classroom. Although mainly used remotely, some tutorials (as in case 2.5) were set in a computer laboratory, giving the students the opportunity to contribute to the wiki with tutor support.

One of the ways that wikis can be used in the context of large groups is to set questions about the topic being discussed in the lecture and ask the students to write an answer collaboratively. From our case studies we conclude that where individual contributions were assessed, students opted to write individually from the outset despite the instructions that they were to engage in collaborative writing. Where no individual contribution was assessed and a group mark was awarded, there could have been scope to develop collaborative writing skills. Students however still chose to contribute individually rather than collaboratively. For instance, in case study 2.4, some students who were asked a question on the relevance of game theory in the context of oligopoly, added their contribution under the following heading: "game theory according to ...following the name of the student" revealing in this way a clear desire to distance themselves from the exercise of writing together.

To help the students to develop collaborative writing skills, the tutor needs to provide a support session where the students become familiar with the concept. For instance, students may be divided in small groups and the tutor provides a question

that the groups have to answer. The tutor sets the following rules: one of the students has to write a sentence tentatively answering the question in a sheet of paper. This paper is passed around to each member of the group who are asked to edit, correct or add the answer. At the end of the task someone from the group can read the final outcome to everyone in the class.²

Students may also be encouraged to create glossaries, revise academic papers and create a list of authors and their seminal works. These tasks need not to be written collaboratively as in case 2.3. Wikis are a good tool to share students' contributions and to foster peer teaching and learning.

Two types of tasks were prescribed in case 2.2. Students were asked to add to the class glossary and literature reviews and were set questions on lecture related topics to which answers could be developed collaboratively. It is important that use of the wiki for such tasks is integrated into module design rather than as an additional and optional activity.

Similarly, in case 2.5 each group was required to add to the class glossary and literature review. Groups were also required to provide two additional contributions on specified topics during the semester. However, in this case, all group submissions were assessed which led to a high level of interaction with the wiki, whereas they were not assessed in case 2.2 thus leading to a correspondingly lower level of contribution.

A prescriptive approach to the tasks on the wiki can encourage students to contribute more reliably to their team objectives. Case study 2.1 specified the week by week tasks to encourage engagement both in the task (and ultimately the final coursework) and with the team. Whilst the students engaged with the wiki for this purpose, they did not engage with it to write their final report collaboratively. This was completed outside of the wiki. One explanation for this may be that the lecturer did not prescribe this. Either way, when using the wiki for measuring group work, it is important to have a template of activities so that a reliable measurement tool can be developed. Contribution to the tasks set each week in case 2.1 was quite high, with over 74% of the cohort engaging with it and the average percentage for individual contributions worked out at 60%. This is likely to be a result of the group task being broken down into week by week tasks, which were easy to follow and maintain. The tasks were also closely linked to the ongoing group work.

There were few contributors in case 2.2. In addition to other factors (primarily integration into module design and assessment of wiki tasks) a contributory factor may be due to the size and diversity of the group. The students appeared to form smaller cohesive groups but did not appear to form a cohesive cohort either in tutorial groups (up to 28 students) or as a whole (182 students). There appeared to be low trust in sharing knowledge outside smaller groups.

² This example was adapted from a technique used by William Fisher, a colleague from the University of Hertfordshire

4.3 Differences amongst learners

Students that are late in making their entries report that they have difficulty in adding their contribution once the main points had been discussed by the rest of the students ("first movers" advantage (Viégas et al, 2004)). This problem can be partly offset by the use of groups (4-6 on a first come basis) even where it is the individual contributions which are being assessed. This was identified in case study 2.3 where the contributions to the initial tasks were not organised by group. The tutor quickly established that supporting the students and enabling them to make contributions later in the process was facilitated by the use of non-organised groups i.e. first 6 contributors are Group A and so on.

Interestingly many students, although unfamiliar with contributing to wikis, did not seem to find the technology daunting. This was especially the case in modules with a relatively high degree of tutor intervention/support as in case 2.3, where part of the seminar tutorial times was used to support students in their use of the wiki. In case 2.5 there were some initial problems accessing the wiki when students were off campus, this was resolved by setting up a direct link from the student's virtual learning environment. There was also a wide variation in the presentation of the wiki. Some students who had a good understanding of HTML demonstrated their knowledge whereas others typed in comments without using headings or appropriate formats such as bold typeface, underlining etc. The most common difficulty for students was in uploading pictures and tables.

In case 2.5, students were encouraged to comment on other students' work, however this rarely happened. This may have been because it was assessed work and students did not want to show their lack of knowledge or to imply criticism of other students' work.

The general feeling amongst cohort in case 2.1 was that a certain amount of computer literacy skill was required to use the wiki. Furthermore whilst some recognised that the wiki assisted in facilitating remote collaboration, it was also accused of being a superficial addition that did not facilitate true teamworking. In particular, a new-comer to an established group found that the wiki did nothing to foster cohesion, suggesting that there is no replacement for face to face contact in this context.

Another issue highlighted by the wiki feedback was the additional difficulty of foreign students posting their contributions in English. One could argue that this difficulty is inherent to these students in whatever task is set in the class. Proficient English writers found it difficult to add or to edit the work of peers whose English was clearly not their first language. In case 2.3, the tutor was reluctant to actively intervene to correct grammar and English for fear of the students becoming reliant on an external editor.

4.4 Role of the teacher in the blended-learning environment

The level of technical competence in terms of using wikis varied greatly within the group of tutors in this project. First time tutor users were initially daunted by the technology itself, but soon came to realise that the issues causing difficulties were more related to the overall structure and management of the individual wikis rather than any technical difficulties. Even when assessing individual contributions for a relatively small group, it was necessary to organise the student contributions on a small (5/6) group basis (even if self-selected). In case 2.3 where individual contributions were assessed, the tutor found that the support and feedback process was much easier if the students contributed within small groups rather than as one cohort.

Adopting the wiki technology presents us with a dichotomy. Setting up the wiki required a significant investment in time by the tutors, whilst the technology was fairly straightforward, its 'newness' restricted its full adoption for some. This issue will be overcome with time / familiarity from the point of view of the tutors. From the students perspective however, each new cohort will still have to climb that learning curve.

There were a variety of approaches adopted by the module tutors to the management and intervention within the wikis. Some tutors adopted a passive approach to encourage the contributors to take ownership of their wikis, whereas others intervened more actively with regard to the management of the wiki and use of the wiki to give feedback on contributions. Both approaches have benefits and drawbacks. A passive approach could lead to student frustration and feeling of not being supported, whereas a more interventionist approach could have an inhibiting impact, thus having a stifling effect on contributions. The feedback from modules where an interventionist approach was adopted was however very positive with regard to transparency of contributions and tutor feedback on those contributions.

In case 2.5, a student with significant experience in using wikis was used by the tutor to help set up the wiki environment. This led to the first wiki page being well structured and interesting.

It is also interesting to note, in case 2.5 that that the tutor took a less active role than intended. This was in part due to the large number of groups (ie 20 groups with weekly contributions) and the time it would have taken to give detailed weekly feedback. However, when students had problems or contributed inappropriately, the tutor gave appropriate advice.

What is not in doubt is that there are different experiences and different levels of adoption in this pilot group both amongst the staff and students. In true blended learning fashion perhaps the way forward is a somewhat utopian approach where

assessment environments and activities can be designed to take account of different learning and teaching styles, made more manageable by technologies such as wikis.

5. Future work

In this section we discuss some open questions and areas for future work.

Further quantitative analysis can be performed on the existing data in establishing correlations between different trial variables.

Another interesting area of future work would be using evidence based research that will observe a cohort of students through a number of consecutive modules which all use a wiki based approach to blended learning and establish the added value factor in students' performance.

Problems with parity in group work are clearly issues for students and lecturers alike, so much so that it has become an agenda item for the Faculty Learning and Teaching Group. Refinement of the wiki approach (as in case 2.1) for developing a model to measure levels of individual contribution and group functioning is clearly one potential way forward for this project.

Finally we leave you with a note on our own experience of writing this paper. After embarking on a journey of motivating our students to use wikis and to develop their collaborative writing skills, we decided that we ought to try for ourselves. Thus we have developed this paper using the MediaWiki platform. Like our students we have experienced similar frustrations: from losing the posted notes that were not saved properly to the situation of losing the contribution due to simultaneous editing. We also felt the difficulty as peers in editing the work of each other and thus implying unintentional criticism of colleagues. We had to our advantage the experience of our students which made us aware of the difficulties we could face. We felt awkward at times as we brought together the contributions of seven colleagues from different backgrounds but were determined to share the end product with all our colleagues interested in adopting wikis as a form of blended learning.

6. Acknowledgement

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Appendix A – Case studies

Case 2.1 Monitor group functioning

Context

Wikis have many uses in a learning environment, not least as a tool for collaboration, especially in a large group setting. With this in mind a StudyNet based (University of Hertfordshire's Managed Learning Environment) wiki was used on a level two undergraduate module in Retail Marketing. It was implemented to monitor group functioning and individual contribution to the group task to ensure parity and transparency. The idea of using a wiki was to embrace technology to measure contribution to group coursework which is typically difficult to assess effectively.

Scenario

The cohort consisted of 80 full-time students living both on and off campus. Seven wiki topics (to be completed on a week by week basis) linked to the group activity were posted on the StudyNet wiki. These were designed as a monitoring and control mechanism in the group work task. As a starting point students were asked to use the wiki to introduce themselves to other team members, to discuss their choice of company to work on, to justify their choice and to agree on one company for the group work. Guidance was given for each of the wikis and students were asked to use the wiki to: log minutes of meetings; allocate tasks; summarise key actions points; share their research; comment on their findings; produce progress reports as a group and individually and upload their work for the group to review and to consolidate. In a reflective piece at the end, students were asked to comment on group functioning and their learning.

The wiki formed 15% of their coursework assessment (30% overall). 10% was awarded for their group functioning and 5% for their individual reflection on the wiki. Good practice wikis were show cased in lectures, reminders were sent if the weekly wikis had not been updated by the groups and suggestions were made about the likely content of the weekly wikis, but overall the tutor had limited input to the group wikis.

Data

Student feedback was gathered via a survey at the end of the module. 26 students responded, giving a response rate of 32%. Written feedback was also requested to gain feedback on their overall experiences. 100% of the groups contributed to the wiki. 74% of the cohort made individual contributions. Very few students had any issues with the login procedure and the majority were happy sharing their work, but

there was an even split regarding the 'ease of use' of the wiki. This could be first time nerves, since 65% had never used one before and 62% felt you had to be computer literate in order to use a wiki.

Students were fairly positive about the value of participating in on line discussions and reading and reviewing work to help their learning, yet very few felt wikis helped in their learning of the subject. This is not necessarily suprising since the main function of this wiki was in measuring individual contributions to group work.

On the issue of the value of wikis for measuring teamwork progress/contributions the verdict was divided. However, only 2 students disagreed strongly. The qualitative comments show another picture:

"wikis were a good way to interact with each other as it helped to increase the communication"

"wikis are a good way of communicating with the whole team. That way everyone knows what piece of work each person has done to contribute to the overall team effort"

"I think that the wikis made group work fairer because our tutor was able to assess how much work each member had done"

"I wish all group projects had an area like it."

"it showed me a new way to work within groups and that although it was group work, we can all contribute without all having to be present at the same time"

The following comments may offer some explanation for the divide:

"this will only work if all members check it regularly"

"wiki was initailly a hard concept to learn"

"I'd never used on as part of a module before ... I was not told enough about how wikis got marked"

"we haven't been taught how to use a wiki effectively therefore we shouldn't have lost any marks"

Further conflict was also demonstrated by the fact that overall, they did not find using the wikis fun, yet they would recommend their use again both next year and in other modules.

Evaluation

As with anything new, adoption and attitudes can be inconsistent. The wiki functions were used to varying degrees by different groups. Some used all of the functions - such as the general discussion site for arranging meetings, the wiki link for 'writing up' group progress, the file section for the uploading and sharing of articles for their presentations, the planner to record meetings and minutes. A few did not even complete the weekly wiki progress task. The relatively high level of engagement is no doubt linked to the fact that it formed part of their coursework marks and it was not surprising that (given the fact they did not find them fun) that nearly 60% said they would not have used the wiki if it was not directly linked to assessment.

Tutor reflection

As a first time wiki user I had a steep learning curve to climb and this cohort were my pilot. Setting up the wiki at the start was time consuming, as was assessing their contributions (so this is not a time saving tool!). With time this will no doubt get easier and I am looking forward to making it better next year. I felt that this is a great tool for measuring group work functioning and contributions. It is both fair and transparent. There were of course mistakes made. These were mainly down to a lack of experience.

Conclusion

Despite the work load, and ambivalence from students, this model for measuring individual contributions in a group setting is one that I feel is worth progressing. The collaboration potential is much greater than encouraged in this first trial, but one which I will focus on in the future. Given that students tend to feel that group work can often be unfair, I think having greater transparency and collaboration opportunities will mean that this issue can only be improved. The signs for improvement are that they need more tutor input and guidance and more help with the technology.

Case 2.2 Support collaborative learning

Context

The objectives of introducing the wiki to the module were to provide an additional method for students to engage with the module, for lecturers to formatively assess learning, to encourage collaborative learning amongst students and for lecturers to provide additional feedback to students.

Scenario

The wiki was used on an undergraduate level three module in Project Management. The module was undertaken by students on a number of pathways in business related Combined Studies and Joint Honours programmes. The 182 students were a diverse group in terms of their experience of information technology and range of other subjects studied. Due to the number of combinations of modules studied and resulting timetable implications, students often work in tutorial groups with students whom they do not already know.

Due to the large number of students it was decided that each tutorial group (8 groups) would be assigned a username for sign on. Students had the opportunity to sign in under their tutorial name, and add their own name or contribute anonymously. The wiki was introduced in week 4 and students were set the following tasks: developing a glossary, literature reviews, periodic tasks related to lecture topics, requesting topics to be covered in an examination revision lecture and developing answers to sample and past examination questions; all with the opportunity for additional feedback. Wiki contribution did not form part of student assessment.

Tutor support included a brief introduction to wikis and editing and etiquette guidelines during a lecture, information on the wiki and how to use it posted with other module teaching materials on the module's website, periodic setting of the aforementioned tasks and weekly monitoring and, where required by students' contributions, providing feedback. Few contributions were made by students. It is not possible to say whether students browsed lecturer or other students' contributions.

Data

The survey elicited a low response rate - 7 respondents from 182 students, although this is perhaps unsurprising given the low level of contribution to the wiki. One respondent did not complete the survey and a number of questions were skipped by one or more respondents.

From the responses wiki technology (questions 3 to 8 and 10) did not appear to be a barrier to students' use, even where students had not used wikis before (question 12) and, taking into two comments in the students' reflections, access problems appear to be when trying to use the wiki outside the university environment. Some responses in this area were 'not applicable', presumably where students had not contributed to the wiki (2 of 7 respondents answered 'not applicable' to "I have made regular weekly contributions on the module wiki" and 3 of 7 responded "strongly disagree to this statement).

Responses to tutor support were spread between those who agreed or strongly agreed and those who strongly disagreed or answered not applicable to questions 12, 14, 15, 24, 27 and 34, student reflections.

In terms of wiki support for student learning (questions 16-21) responses were spread between "strongly agree" and "strongly disagree". Questions relating to collaborative learning (questions 23 and 25-27) were similarly spread with some "not applicable" responses.

Free format responses (questions 33-34) indicated that earlier incorporation into the module would be desirable, positive response to the use of wikis in the module, use of wikis from a social/networking perspective and negative responses to the module and use of the wiki.

Evaluation

The low response rate is indicative of the low participation in wiki contributions. However the responses also indicate areas for improvement in the use of wikis, in particular planning of wiki use before the start of the module and improving guidance on off-site access (possible but not evident to students)

Tutor reflection

Opportunities to fully integrate the wiki into the curriculum were limited by deciding to adopt the wiki just before the start of the semester and my workload during the first few weeks of the semester. The major implication of incorporating the wiki into learning and teaching would be in curriculum design and module planning. Once implemented, the wiki was not difficult to incorporate into teaching practice and, although students did not adopt the wiki, I feel that had students used the wiki more this would not have added to the in-session workload for lecturers.

Assessment of wiki contributions would provide an incentive to students and offer the opportunity to encourage collaboration and evaluate the use of wikis more fully. I would like to investigate the fairness of assessing wiki contributions in larger groups where students may not be members of cohesive (and trusting) cohorts.

Conclusions

I would use wikis in future, providing that the wiki could be incorporated into design or at least planning/delivery of the module. Given the diverse and disparate nature of this particular large group I would need to consider the prerequisites for collaborative learning in a group of this size and diversity. Notwithstanding the latter comment, wikis could provide opportunities for larger groups to have increased interaction with lecturers and fellow students not provided within the model of 21 contact hours.

Case 2.3 Develop learning communities

Context

A wiki (using mediawiki) was adopted within a postgraduate module in Corporate Finance. The objectives were firstly to encourage the students to develop a learning community, which could accommodate the needs of part-time (non-campus based) students alongside full-time students, and secondly to encourage the students to take a more active role in their learning. In addition the wiki was also a way of giving

ongoing feedback to the students with respect to academic sources of information and the development of critical evaluation skills.

Scenario

The postgraduate cohort consisted of 33 students who were a mixture of full-time / part-time students and consisted of a variety of nationalities. The tutor designed the framework for the wiki contributions, gave an initial introduction to the wiki and instructions to enable the students to contribute to the wiki. Instructions were also posted on StudyNet, the virtual learning environment used within the University.

The students were initially encouraged to post individual information on the wiki, to introduce themselves to the rest of the group and also to familiarise themselves with wiki editing. The tutor supported students through email and also within seminar sessions regarding the use of the wiki, but did not intervene with any postings to the wiki.

The original idea in using a wiki was to get the students to build their own reading lists around several topics, critically evaluate academic articles and post contributions to topic related issues or questions. A series of five topics linked to seminar discussions, coursework topics and the examination were posted on the wiki. The tasks associated with the topics involved different sorts of activities ranging from contributions to discussions about issues relating to theoretical theories, to requiring students to find articles relevant to particular theories, posting links to the articles and giving a critical review of the articles.

These contributions to the wiki formed 20% of the coursework grade (10% of the overall grade) and the students were assessed on an individual basis for their contributions to each of the five topics, with a maximum of 4 marks being awarded for each contribution. These marks were then published on StudyNet on a regular basis after the closing date of each wiki contribution. The students were also informed that the work they were doing for their contributions to the wiki would also support their remaining coursework and topics covered in the examination.

The tutor took a very active role in overseeing the wiki and in giving brief individual feedback after contributions to each topic area had been made. This feedback was given via the discussion area within the wiki. The tutor also submitted the student contributions to a plagiarism software programme and was then able to give the students feedback on what was often unintentional plagiarism. Students were penalized for plagiarism in the marks awarded for the particular topic. This provided some developmental support with respect to the remainder of their coursework and enabled the tutor to communicate to the students about how to avoid plagiarism.

Issues

The technical aspects of using a wiki and the design of the structure of the wiki as ab initio users involved a steep learning curve for all involved, especially the tutor! This

required a considerable amount of time at the start and for the first few weeks of operation.

Given that the wiki was being operated within the first semester on a one year programme also presented problems in that there were several students who were late starting on the programme and who therefore had missed the initial introductions to the wiki and had also missed the deadline dates for the first and sometimes the second topic contribution. This meant that continuous ongoing support had to be offered by the tutor and “catch up” mechanisms also had to be put into place to enable the late students to gain the marks that they had missed through not being able to contribute to the initial topic tasks.

There were also some technical problems caused by students who inadvertently deleted links to other students contributions and either were unaware of having done so, or did not know how to rectify the situation. This led to a certain amount of anxiety and the tutor had to intervene on several occasions to restore the original work.

Assessing individual contributions proved to be very time consuming with the initial structure. The structure was then amended to require the students to contribute within self-determined groups of 6. It was then much easier to give feedback, to rectify any problems caused and to assess the contributions.

Data

At the end of the module multiple choice questionnaires (see Appendix B) were distributed to the group who were also asked to give written comments if they wished. 26 responses were collected. Overall the responses for this group on use of the wiki were very positive.

Most students (+70%) found the wiki technology relatively easy to use, even though they were not particularly familiar with the technology.

The students were very happy with the support offered by the tutor (+90%) and liked the opportunity for regular feedback

Most felt that the wiki had supported their learning. Just under 60% of students felt that the wiki had supported their coursework, whereas 92% felt that being able to read and review other students' work had helped their learning and felt comfortable in making their contributions visible to others. 78% thought that tutor feedback had been helpful in improving the quality of their work and 61% felt that other student reviews had been of help.

Only 57% said that they would have used the wiki if it had not been linked to assessment, whereas 88% would recommend the use of a wiki in other Business School modules. Most felt that using the wiki had been fun.

Evaluation

The level of engagement within the wiki was certainly helped by the fact that contributions were assessed but the students regarded this as a positive aspect and enjoyed regular feedback with the opportunity to gain marks throughout the process rather than just at the end. I was surprised by how comfortable the students felt in posting their work for others to read and how much they appreciated being able to see the work of others and to benefit from other students' ideas and views.

"Wiki discussions helped me to read the discussions of different people and thus, increased my information on the topic and some new researches"

"Wiki is quite interesting and I found it is fun. I could learn more from other students' contribution....Wiki encouraged me to learn more because I would not have been reading this much unless I was required to contribute on wiki."

The ease of use of the technology was assisted by the high level of active support offered by the tutor especially at the beginning, although several students did comment that the main sources of difficulty were regarding the deletion of their work by other students and the accessibility of the wiki off campus.

Tutor reflection

Issues

Supervising the wiki was very time consuming, especially at the beginning with helping the students to familiarise themselves with the technology and helping them to correct deletions made in error. It did seem to be more difficult to access the wiki off campus, which caused a certain amount of anxiety.

The tutor had imagined that the students would use the wiki for collaborative writing, but given that they were being assessed on an individual basis, they were very keen to make individual contributions rather than to write collaboratively. This would make this type of assessment very onerous for a large group

Upfront planning with regard to the design of the wiki was very important and in hindsight some of the tasks could have been structured in a manner, which more clearly defined the requirements of the student contribution.

Benefits

The tutor did feel that the wiki gave the less confident and vocal members of the group a chance to contribute to discussions, but did question whether using the wiki actually improved the quality of the discussions and subsequent coursework and examination performance.

An unexpected benefit of using the wiki was that it enabled the identification of plagiarism issues and thus provided an opportunity to clarify the meaning of plagiarism with students without it unduly affecting the whole coursework grade. The wiki was also a good way of guiding the students with regard to correct academic referencing.

The students definitely welcomed the opportunity for ongoing feedback from the tutor and enjoyed the transparency that the wiki offered with regard to their work in relation to others' contributions.

Conclusions

Although the tutor felt that using a wiki involved a good deal of extra work, the tutor was very surprised by how much the students felt that they had benefitted from the wiki and by how positively they felt about their experience. The wiki will be used again on the same module but will be structured in a clearer way with stricter guidelines regarding contributions. Given the diverse nature of the students, individual contributions will still be assessed.

The future

Having used a wiki for the first time, the tutor feels more confident about using it again and hopes that having clearer ideas about how to structure tasks and contributions will mean that it will be less time consuming.

A group structure will still be used for contributions, but contributions will still be assessed on an individual and regular basis.

The initial topic tasks used in this first wiki were, in hindsight, a little ambitious and so less complex initial tasks will be designed, which will have clearer instructions regarding contributions.

Case 2.4 Foster students' learning autonomy

Context

Innovative processes like trying collaborative platforms (wikis) have the potential to impact both the target audience as well as those that administer the process. This was certainly the case for the tutor of the module of Business Economics level two and its students. The implementation of wikis within the coursework was motivated by three specific goals: to foster the students learning autonomy, to create a tool for revising for the exam, and to improve exam results from the previous year. Aiming to minimize the foreignness of the wiki application, it was adopted the wiki platform

managed by the University of Hertfordshire –“StudyNet wiki” since the students were already familiar with the StudyNet.

Scenario

The cohort consisted of 111 students divided in seven groups. Each wiki group worked towards their coursework which consisted in five questions that were to be developed throughout the term. The questions were posted every second week usually after the lecture on the subject had been given. The deadline to answer the five questions was placed in the last week of the term. This was so as some students were not registered in the module in the first few weeks and needed further time to catch up.

The students were asked to contribute (individually) with 300 words towards each question. The wiki coursework was worth 30% of the overall grade of the module. The individual contribution was counted in several different ways. Not only were they encouraged to discuss the main concepts and definitions related with the question, but they could also create glossaries, revise academic papers and create a list of authors and their seminal works. The students were given the choice of creating these per question, or in a page encapsulating the material of the five questions.

Throughout the term, the tutor had an active role in motivating the students to contribute without however participating in the wiki answers. The seminars were used to promote a discussion on the topic that was being developed in the wiki that week. In the middle of the term (fourth week) the tutor provided formative feedback on the wikis. This was an important exercise that motivated the students and also helped to identify who were the students that were not engaging.

Data

The data was collected in two distinctive ways: through a survey administered to the students, and through a set of reflective questions posted in the wiki pages. The rate of response of the questionnaire was around 30%. In contrast nearly all the students that participated in the wiki coursework provided an answer to the reflective questions. As a consequence the percentages found in the questionnaires may not reflect entirely the population of the students in this module.

The results of the questionnaire revealed that 82% of the students had never used wiki technology before, but this does not seem to have been an impediment since 84% thought the technology was easy to use and 77% reported that they did not experience problems when submitting their work. 53% found that the wiki had helped them to learn the subject, but the percentage rises to 74% when the students were asked whether they had learned from the reading and the reviewing of peer contributions. The survey further reveals that the 75% of the students did not find

wikis fun and 70% would not have engaged with the wikis if it was not assessed coursework. Nevertheless 75% admitted to be comfortable in sharing their contributions with their peers, and 56% recommended the use of wikis for a second year.

From the reflective questions/answers there were a set of positive points and challenges there were compiled by the tutor:

- Wikis contributed for the clarification of the topics presented in the lecture both due to the individual research but also to the explanations /examples of the peers.
- Students recognise the synergy of working in group: some referring to “the help of thinking outside of the box” as they read each other’s contribution
- Students learned from their peers both the content of the module as well as the IT skills they needed to post their contributions
- Many students saw the wiki questions as a way of formative assessment, even though they did not received a mark for their answers until the end of the term. Students noted that they assessed their knowledge on a particular subject by their easiness to contribute.
- Students admitted to have developed their writing and their research skills
- Students identified the wiki as being good to revise for the exam
- Students admitted that because of the wiki coursework they had to revise early on
- Students recognised that their contributions had improved as term progressed

Challenges pointed out by the students:

- Some student found the IT requirements a challenge in the beginning of the term
- Some students would have liked to have met their peers more frequently so that they could divide better their work
- Other students complained about the poor English of some of their colleagues
- Some students admitted they did not know how to research
- Many students point out the difficulty of adding to the question when some of the students had already started to answer
- One student pointed out that it was hard to monitor peers concerning plagiarism

Evaluation

From the data collected there are clear indications that despite the challenges the students enjoyed a series of benefits from the implementation of the wikis.

The wiki coursework appears to be a prime example of peer learning, not only in regards to the IT skills needed to make the entries, but also in regards to the content of the entry. However the routine of answering the wiki questions far from being an easy task demanded the students assess their knowledge of the topic and to

develop an ability to express this knowledge in the form of written posts. Though the survey reveals a large percentage (75%) of students being comfortable with the task of posting, this task proved more difficult to certain students: those for whom English was not their mother tongue and those whose learning style was not reflected at all in a written format. Interestingly these students also have a greater difficulty in exams and standard coursework essays.

Somewhat related to the challenge of writing is plagiarism. Despite the consequences of plagiarism being made very clear at the outset, some groups still displayed copied material without references and/or quotation marks. Some other students however were very conscientious and used to contact the tutor expressing their frustration in their inability to monitor their peers. In an attempt to tackle the problem, one of the students posted a message to his colleagues (including other groups) asking his peers to refrain from committing the offence of plagiarism. His concern was sparked from his evaluation of the contributions posted in his group and my advice that plagiarism was not acceptable. This is a clear example of how some of the students took ownership of the content of their wiki pages.

Tutor reflection

Agreeing to use wiki technology involved a very steep learning curve that was constrained by the habitual limitations of time. Before support could be provided to students the tutor had to become confident in the use of wikis. In order to reduce the initial confusion about the new method of assessment guidelines were developed showing how the assessment was going to be done and included some of the most frequently asked questions. Finally for the first few weeks extra office hours were arranged to demonstrate how to write wiki pages.

A dual benefit was perceived in the use of wikis: on the one hand the wiki questions served as a teaching device in that the students were to research material that was not covered fully in the lecture. On the other hand the wikis served to revise the material covered in the lecture.

The greatest challenge in the use of wikis is to assess the academic quality. Difficulty to single out individual contributions from a group in the StudyNet wikis, made it extremely complicated to assess particular students, especially where the bulk of the students performed poorly and few students made relevant contributions. This was more of an issue of concern in the earlier postings. Wikis written towards the end of the term seem better written, which might be a reflection of an improvement in the skill of collaborative writing. The same grade was given to every individual of the group provided that there had been a contribution; this was done even though it might raise some issues of unfairness.

Finally in the motivation to adhere to this project clouded awareness of the main benefit of the use of wikis that wiki platforms foster the development of the skill of collaborative writing and such a skill is paramount for business students. Disregard

of this benefit was not unique to the tutor as it was not highlighted by the students either.

Conclusion

Three measures of success were considered: the creation of a tool for exam revision, the improvement of student learning autonomy and the improvement exam results. The two first goals were successfully met. Judging by the feedback received from the students deep learning did occur, partly due to the autonomy that was given to the students to pursue their own learning (they could choose the format of their contribution). Regarding the third goal, there was neutral impact on the exam grades.

During the next academic year wikis will be implemented for a second time, taking note of comments and difficulties experienced the first time around. In the future smaller working groups will be used. Also a wiki platform will be used where the individual contribution will be more easily distinguished. The students will be motivated to develop collaborative writing skills early and to really work as a team even though they may never had the chance of meeting physically as a group (perhaps using email lists, or video conferencing).

Finally, the practice question will be made easier to answer to give the students confidence in posting their first contribution; this year the practice question was quite difficult and may have discouraged some students at the outset!

Case 2.5 Share reading and learning

Context

As wikis are increasingly being used in business to share knowledge, it was decided that using a wiki would be a good experience for students taking a level two module in Operational Research. The module is of a quantitative nature and in the past, students did very little reading around the subject. The aim of using a wiki for this module was to encourage students to read more widely about Operational Research, share their learning with others on the module and also to learn wiki technology to enhance their employability.

Scenario

The Operational Research module consisted of 80 students, the majority of whom were full time students taking a Business, Joint Honours or Combined Studies degree, and living both on and off campus. Most students had chosen to take this module rather than it being a compulsory part of their degree. Students worked in self selected groups of four.

Each group of students were required to contribute to the wiki site each week by adding one glossary item, one literature review and two paragraphs on questions based on that week's lecture topic. They were also required to make two additional contributions on a further two specified topics during the semester. All topics were linked to the examination. The tutor took a passive role and did not contribute to the website but was active in advising students on how to upload information to the wiki, suggestions of appropriate content and clarifying requirements.

The wiki contributions accounted for 15% of the overall assessment for the module (overall coursework assessment was 30%). 5% was awarded for the weekly contributions and 10% awarded for the two additional contributions.

Data

Student feedback was obtained at the end of the module in two ways. Firstly, students were given 30 statements about using wikis and were asked to rate each statement from A to E. E.g. 'Using wikis was fun'. The response rate to the statements was almost 50%. Secondly, students were given the opportunity to contribute to an on-line questionnaire, 17 students responded to the questionnaire. Overall, the students' responses from the 30 statements were positive.

- 100% of the groups contributed to the wiki site.
- Over 80% found the wiki technology relatively easy to use, even though they were not familiar with the technology. The students were also very happy with the support given by the tutor.
- Over 70% students were comfortable making their contributions visible to others. The majority felt that the wiki had supported their learning.

The less positive statements included

- 50% students did not enjoy using the wiki
- 40% did not recommend using the wiki next year
- 30% contradicted the statement that 'wiki supported me in preparing the coursework'

The qualitative comments were also extremely positive and included:

- "I think it is a good way to be able to share work with people on the same module. It's useful to see the work done by other students as we are all learning the same subject and can learn from one another."
- "Wikis are useful to gather all relevant information for the course in one place".
- "Good source of information especially with difficult topics, as students can relate to work put up by other students".

- “Strongly suggest all modules had a similar set up”.
- “Good experience and different teaching method gained my interest”.
- “If I had to produce material of the form of wikis, I am now confident I would be able to adhere to all the basic needs”.
- “It was a learning curve and challenging, so it was enjoyable and fun”.
- “Helped develop team working skills such as delegate work between the group and the need to communicate clearly”.

However, a few students requested more training at the beginning as they found using a wiki confusing to understand how to use the site. They also found it difficult, initially, to upload material on to the wiki site.

Evaluation

Overall, the majority of students appreciated being able to use other students' contributions to the wiki site, they enjoyed being able to learn from other students and thought it would be useful for revision. Some students enjoyed learning the technology as it gained their interest and would like to use wikis in the future:- “it's useful to see the work done by other students as we are all learning the same subject and can learn from one another”.

The high level of contribution to the wiki site is no doubt linked to the fact that it formed part of their coursework. Students gained additional skills not directly related to using wikis, for example the need for clear communication when delegating group activities, learning to adapt to new technology and overcoming challenges in life.

The main sources of difficulty, initially, included : the accessibility of the wiki off campus, the alleged removal of student work from the wiki site, the difficulty in uploading information, in particular pictures and files, on to the wiki site

In all cases, these difficulties were resolved. In a number of cases the results from the statements and the questionnaire are contradictory. For example, the majority of students responding to the questionnaire found using the wiki site fun and would like to use wikis again, but this was contradicted in the student responses to the statements.

Tutor reflection

Setting up the technology for group work proved challenging. For this reason, one of our student mentors was employed to help. This mentor had work experience in developing wiki pages and was a tremendous asset in getting started. The mentor had some good ideas on how the main page should be split into sections, he also helped set up student groups with simple user names and passwords, which meant that the initial passwords for all students were known which proved to be very useful.

Initially, the tutor intended to take an active role in using the wiki, but for various reasons this did not happen. Consequently, students were also passive in the way that they used the wikis. The students did submit their assessed work but did not comment or critique other students work.

Although, the tutor was disappointed with their own contribution, the feedback has shown that students still value the experience and have learnt many new skills. Feedback showed that they looked at what others had done and some of the international students used this extensively as another source of learning.

Initially, students found it difficult access the wiki off campus but by setting a direct link from the students StudyNet page (virtual learning environment) for this module, this problem was overcome.

One student changed modules as a result of her concern about using wiki technology

Conclusion

Although, the tutor was not actively contributing to the wiki site, the majority of students still seem to be quite positive about their experience. There are many less obvious benefits from getting students to use wikis, for example, being more confident in addressing new technology and developing skills for employability. Using the wiki technology is relatively easy for standard text but many students reported they had difficulty in uploading pictures, tables and formulae. In order to get the most out of using wikis as a form of collaborative learning, it is essential that the tutor continually interacts on the wiki site to clarify areas of confusion and direct student learning.

Case 2.6 Support distance learning

Context

There were two groups of students involved in distance / blended learning on a two semester Business Intelligence Online module delivered to final year computer science undergraduates. As part of the distance learning material there are a series of exercises which are either to read and summarise an article or to complete self assessment questions. Previously the students had done this and received comments by the email based discussion forums on the modules' website.

In order to be able to give better feedback and to initiate class discussions it was decided to make use of the wiki to enable a freer flow of material.

Scenario

The wiki was used as the first of four assignments . It counted for 5% of the overall assessment and the students were required to upload the completed tutorial work for any five tutorial assignments throughout the two semesters.

The students involved in this wiki exercise were distance and blended learning students. The distance learning students were across the globe whilst the blended learning students were based in the Caribbean and had access to a local tutor.

The first group were aware of the wiki exercise at the beginning of the two semester course whilst the Caribbean group only became aware of it towards the end of the course. These differences in timing may be at the root of some of the differences in responses to questions relating to tutor support and to relevance to the course. Most of the distance learning students chose to complete the assignment early in the first semester and thus most responses were for the early tutorials. The submissions from the Caribbean were of wider variety.

Data

Feedback was elicited using a questionnaire at the end of the module. There were 5 responses to the questionnaire from the (16) distance learning students and 15 from the (19) Caribbean based students. All the Caribbean students who completed the wiki assignment responded to the questionnaire.

Of the 16 distance learning students 12 completed the wiki assignment, but there were two additional students who completed the wiki assignment but did not complete any further work, they are not included in the 16.

The results relate to the overall scores for both groups whilst marked differences are highlighted at the relevant points, although generally the distance learning students were more positive than the Caribbean students.

The majority of students had some difficulty in logging on, accessing, saving and loading wiki pages, despite them being final year Computer Science students.

Most students thought that the technology was easy to use and to learn. But that the structure set by the tutor was not easy. They also thought that to use a wiki you needed to be computer literate.

Most had heard of wikis but had not used wiki technology before. In this context it is suspected that 'used wiki technology' was interpreted as meaning constructing wiki pages.

The support in using the wiki was just in favour of the tutor support being adequate. This was due to a combination of circumstances, firstly that the process of logging on to the wiki for students who are no where near the University is a two stage process which involves first logging on the VPN (secure Virtual Private Network) and then onto the wiki from StudyNet. Unfortunately you can also get onto StudyNet without using the VPN and this was the source of some confusion. The VPN connection is not necessarily of the highest speed when not in the UK and this lead to further connection problems. It has been discovered how difficult it is to provide satisfactory support at a distance, it being difficult to understand what the real problem is. Hopefully this will be resolved as the tutor in Trinidad (Ravi Ragoonath) has created an excellent guide to the process. The distance learning students found the tutor more helpful than the Caribbean students.

The majority of students found the use of the wiki helpful in understanding the course material. It was not found useful in helping with the other coursework, but it was not designed to do this.

Contributions to the wiki were generally made on an irregular basis with only five of the 20 respondents doing it regularly.

Most (12 of 20) would not have used the wiki had it not been linked to an assignment.

Most of the respondents think that the wiki should be continued in future years even though only a small majority (11 of 20) found it fun!

Evaluation

The students generally found that the use of the wiki added to their experience of the module. The wiki was only intended as a way of involving students in other peoples' work and to act as a display of work in much the same way that it would happen in a face to face tutorial.

In this sense it was success as it did lead to discussion of the work using the mechanism of the StudyNet discussion groups. As one would expect the students who came to do the work earlier in the module gained most from the discussions which often went on a great length.

These discussion groups enable points of misunderstanding to be cleared and facilitated a greater depth of learning than was evident from previous years when a wiki was not available.

Tutor reflection

The tutor now appreciates the difficulties in enabling students to perform tasks when you do not have face to face contact with them. The difficulties in having students login to a site using a VPN are not to be underestimated. There is a great need for a strong and obvious structure to be created on the wiki so that work cannot be accidentally erased or overwritten.

From the point of view of creating a discussion forum the wiki worked well and it provides cohesiveness and an additional point of contact for a group which is geographically dispersed.

Conclusion

The use of the wiki was generally speaking a success with most respondents being in favour of it continuation. The login process needs to be made more transparent and this would save a great deal of time for both the students and the tutor. Hopefully this has been dealt with by the guide provided by one of the Caribbean students.

The distance learning students were generally more positive than the Caribbean students this may be due to the lack of direct contact that they had with each other and with a tutor which made the exercise more relevant.

Appendix B Questionnaire

Use the OMR answer sheet provided to mark the answers to all questions. Answer each question with a, b, c, d or e using the following scale:

(a) Strongly Agree (b) Agree (c) Disagree (d) Strongly Disagree (e) Not Applicable

1. Login procedure was easy and always worked
2. I had no problems accessing the wiki pages
3. I had no problems saving (i.e. submitting) my work
4. The time to load the pages was good
5. Wiki technology was easy to use
6. Wiki technology was easy to learn
7. The structure/layout of the wiki pages set by tutor was clear and simple
8. To use wiki the user must be computer literate
9. I usually used the wiki on campus
10. I have used the wiki technology before
11. I have heard of the wiki technology before
12. The instructions provided by tutor for using wiki were appropriate
13. The support provided by tutor in using wiki was appropriate
14. Wiki supported me in preparing the coursework
15. Using wiki has helped in my learning of the subject
16. On-line discussion topics for were interesting and appropriate
17. Participation in on-line discussions has helped my learning
18. Building wiki based module glossary has helped my learning
19. Building wiki based module bibliography has helped my learning
20. Reading & reviewing other students wiki contributions has helped my learning
21. I have made regular weekly contributions on the module wiki
22. Tutor feedback on my contributions have helped me in improving the overall quality of my work
23. Other students reviews of my contributions have helped me in improving the overall quality of my work
24. I was comfortable in making my contributions visible to other students
25. Feedback provided by tutor and other students was fair and useful
26. I would have used the wiki even if not directly linked to assessment
27. I would recommend the use of the wiki in other Business School modules
28. I would recommend the use of wiki for this module in the next academic year
29. Wiki is a worthwhile supplement to StudyNet
30. Using wiki was fun