From forums to wikis: Perspectives on tools for collaboration

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A B S T R A C T

Web 2.0 communication tools have considerable promise for supporting collaborative learning. But there is a need for research examining learners’ and teachers’ experiences of the newer communication tools, such as wikis, in comparison with well-established tools, such as discussion forums. This paper reports on an initiative where distance learners used an in-house wiki for online tutorials which had previously taken place via forums. The perspectives of students and tutors on this experience were gathered via an online questionnaire to students and unstructured online feedback from tutors. Some students and tutors felt that the wiki was better than a forum for collaborating on shared documents. However, at that stage in the wiki’s development it was found to be more difficult to use than a forum, and slower. Some tutors found the wiki to be too slow to use effectively. These findings highlight the importance of good usability in collaborative software. The research also revealed that some students were uncomfortable with the prospect of editing each others’ work in the wiki. They had concerns related to ownership of contributions. This finding relates to the concept of ‘sociability’ in relation to online communication. The research therefore identifies both usability and sociability as key requirements for Web 2.0 communication tools.

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1. Introduction

In recent years there has been considerable interest in the possibilities of ‘Web 2.0’ technologies for education (Hughes, 2009; Mason & Rennie, 2008; Redecker, 2009). These technologies, also described as ‘social software’ or ‘social media’, include online communication tools such as wikis, blogs and a range of different types of social networking sites (for example, Facebook for community building, Flickr for photo sharing and Delicious for sharing bookmarks). Many educators are excited by the possibilities such tools offer for making learning more collaborative, more active, and more enjoyable. There is also a view that, because these tools are freely available and are widely used by young people, they should be adopted in education (Green & Hannon, 2007). However, to date, there has been little analysis to determine how the characteristics of the different tools might apply in an educational context. Consequently, research is needed to investigate how students and teachers can use these tools for educational purposes, and what benefits or problems arise.

The use of online communication tools for learning is far from new. Various kinds of discussion forums have been used in education for a considerable time, particularly in distance learning settings (Mason & Kaye, 1989; Palloff & Pratt, 1999). Discussion forums, chat tools and the more recent technologies of wikis and blogs are now typically available via institutional virtual learning environments (also known as course management systems), as well as on the open web. In combination, these mean that educators have a wide choice of communication and collaboration tools to use with students. Faced with these opportunities, educators need guidance as to which tools are best suited to which purposes.

This paper makes a contribution by examining students’ experiences of two asynchronous communication technologies — discussion forums and wikis — as used in the UK Open University course Networked Living: Exploring Information and Communication Technologies. The paper begins by reviewing some of the research literature on forums and wikis in education, before discussing the findings from a project that investigated the use of forums and wikis in this distance learning course. The study evaluated the use of wikis for online tutorial activities that had previously been carried out using discussion forums. This paper presents the findings from the study, giving perspectives from students and tutors.

2. Discussion forums in higher education

Discussion forums of different kinds have been used in education for many years. There are various terms to describe them (e.g. bulletin boards, conferencing systems, and computer-mediated communication systems) and different products that have been used. Examples include: FirstClass (Open Text Corp. Ontario, Canada); Lotus Notes (IBM, Armonk NY, USA); and the discussion forums within virtual learning environments such as Blackboard (Blackboard, Washington DC, USA) and the open source product Moodle. The central features of a discussion forum are a means of posting messages, a repository for storing them, and an interface for navigating through the ‘threads’ of messages and replies.

Many educators have reported on the benefits of online discussion forums for learning. For example, Vonderwell (2003) reported that...
students felt more comfortable asking questions online than they would face-to-face, and highlighted the benefits of an asynchronous medium for reflecting on ideas and for self-expression. Browne (2003) reported that online discussions by students were of a very high quality. In Browne's study, staff and students commented that having time to reflect on others' contributions resulted in more considered responses. There was also a sense of community and enjoyment among students. Coppola, Hiltz, and Rotter (2002) found that staff had a closer relationship with their students online than face-to-face. Staff reported that communication with students was more convenient and efficient. Because online communication seemed less public, shyer students felt less inhibited. McConnell (2006) argued that, within a social constructivist framework, online discussion can provide very positive outcomes. Questionnaires to students showed that they benefited from the online discussions, and felt an enhanced sense of community.

However, all the researchers referred to above have also highlighted problems with online discussion. Vonderwell (2003) identified problems with students not engaging each other in dialogue. This seemed to be because students had not met previously face-to-face, and felt uncomfortable making contact. The teachers felt that the online environment was impersonal. Browne (2003) also identified lack of participation from some students. There were technical problems initially, and some students found the online environment complex and frustrating. Concerns were also expressed by students and staff as to the amount of time required for online participation. The teachers interviewed by Coppola et al. (2002) also commented on the amount of time they needed to spend online. The 'friction of communication' was mentioned as a problem: it took more time to type a reply to a student's query than it would to respond face-to-face. McConnell (2006) reported problems for students when trying to follow complex threaded discussions, particularly when working in large forums with many participants.

It is clear that discussion forums provide educational benefits, by allowing students to communicate with each other and with their teachers online. However, forums may not be the best online technology for all educational purposes. In recent years educators have been exploring alternative tools, within the general category of 'Web 2.0'. One such tool which has particular promise for collaborative learning is a wiki.

3. Wikis in higher education

A wiki is a browser-based software tool which enables users to collaboratively write, edit and link HTML-based documents. Wikis also provide a history facility to keep track of the modifications made by different users, and to enable changes to be reversed if necessary. Wiki pages can be created and edited by using simple text editing facilities that are provided as part of the wiki software. The original philosophy of wikis was one of complete openness, with any web user able to modify the content. However, wikis can also be set up so that only certain users can access or edit the pages (O'Leary, 2008).

In an educational context, wikis can offer many benefits (Richardson, 2006; West & West, 2009). They allow students to work together in a shared environment, with the progress of the work visible to all students, and to the teacher, at any time (Endean et al., 2008). This visibility and sense of creativity and progress can be highly motivating (Trentin, 2009; Wheeler, Yeomans, & Wheeler, 2008). Students can provide feedback on each others' work, and help to improve it. Lundin (2008). Wikis also allow for web documents to be structured and organised in different ways, and to be updated regularly. They therefore provide a valuable way for groups of students, and their teachers, to collaboratively develop and maintain learning resources. However, the lack of a pre-existing structure can be uncomfortable for some students (Lundin, 2008; Wheeler et al., 2008).

In principle, wikis offer a way for learning to become more student-centred and democratic. Learners can use the wiki to share and explore their ideas, without the need for a teacher or any individual student to take a leading role (Trentin, 2009). However, as Vratulis and Dobson (2008) discovered, students may not all be able to play an equal role in making contributions to a wiki. As in other forms of collaborative work, some students dominate, and others fail to participate fully, which means that the final product may not be representative of all students' perspectives. These issues can be particularly problematic in a wiki because of the lack of clear ownership of contributions, and the facility for users to change each others' contributions. This can cause frustrations for some students, who may feel that their own work is no longer represented in the wiki. Even if participation is reasonably equal, some students may still feel uncomfortable with the prospect of modifying each others' work (Minocha & Thomas, 2007; Wheeler et al., 2008; Hemmi et al., 2009).

To alleviate these problems, it is important for learners to discuss the roles and 'protocols' that they will use in their collaborative work via wikis. This process in itself can be a valuable experience (Vratulis & Dobson, 2008).

As discussed in the remainder of this paper, many of these benefits and issues were apparent when wikis were piloted in a course at the UK Open University. The students, who were already familiar with forums, valued the wiki as a tool for collaboration, but were not entirely comfortable with aspects of its use. Further details of these findings are given below.

4. Comparing wikis and forums in a distance learning course

The UK Open University was one of the early adopters of online communication for learning. As a distance learning institution, the Open University has gained considerable benefit from the use of technology to facilitate discussion and collaboration among students and to reduce feelings of isolation (Mason & Bacsich, 1998). Students at the Open University rarely have the opportunity to meet face-to-face, except at tutorials. These tutorials, for groups of up to 25 students with their course tutor, are typically held every 4 to 6 weeks during a nine-month part-time course. However, because of work/family commitments or problems travelling, some students do not attend tutorials (which are not compulsory) so they never actually meet their fellow students. To alleviate these difficulties, many courses use discussion forums. Furthermore, some courses have recently begun using blogs, wikis and synchronous communication tools.

4.1. The course context

Since its first presentation in 2005, the Open University Level 1 course Networked Living: Exploring Information and Communication Technologies has made considerable use of online communication tools (Kear, Woodthorpe, & Moss, 2006). The course is an introduction to both technical and social aspects of information and communication technologies (ICTs) and is a requirement for several Open University qualifications. As a result the students have a wide range of knowledge and experience of ICTs and of online communication. The course has an intake of over 1000 students per course presentation, and many of its students have little or no prior experience of higher education. It is therefore important for students to keep in contact with their tutor and their fellow students so that they can be supported in their learning. Recent experience has shown that many Open University students do not attend face-to-face tutorials. Therefore the course adopted a 'blended' approach to tutorial provision, with several of the tutorials consisting of structured online activities. The course typically has only two face-to-face tutorials in its nine months duration. Other tutorials take place online, facilitated by the course tutors, who have considerable experience of online teaching.
The course is made up of four sequential ‘blocks’ of study, as follows:

- Block 1 Living in a networked world provides an introduction to ICT systems (1 month);
- Block 2 Communication and identity looks at how networks connect people, information and devices (2 months);
- Block 3 Entertainment and information considers ICTs in entertainment and news broadcasting (2 months);
- Block 4 Health, transport and government explores three specific contexts in which ICTs are becoming increasingly important (2 months).

Each of Blocks two, three and four has an associated online tutorial, which is linked to the assignment for that block. Initially, all of the online tutorials took place via discussion forums (with some use of synchronous chat) using FirstClass, which at the time was the Open University’s standard online communication tool. However, the course has now trialled the wiki facility which is provided within the university’s Virtual Learning Environment (VLE). Selected tutor groups used the wiki for some of the online tutorials. Although these tutorials were not redesigned for use with the wiki, they were chosen because the tasks within them were suitable for the wiki environment. Direct comparisons could therefore be made between using the wiki and using a forum for these online tutorials.

4.2. The online tutorials

Nine course tutors took part in the trial, which ran from February to October 2007. Each tutor was responsible for a group of approximately 15 students. The tutors offered the wiki to their students as an alternative to a forum for the online tutorial associated with Block 3. Most of the tutors also offered the wiki for the Block 4 online tutorial, though some chose to return to using the forum in Block 4.

For the Block 3 online tutorial, students worked in pairs allocated by their tutor. Each student chose one of the block learning outcomes and wrote an entry in the wiki explaining how they had fulfilled this learning outcome. Students then provided constructive feedback on their partners’ entries, by adding a further contribution to the wiki. Each student used the feedback to improve their initial entry, which they then submitted as part of the assignment for the block. Most of the tutors created templates within the wiki so that students did not have to learn how to create linked wiki pages.

For the Block 4 online tutorial, the students collaboratively evaluated a selection of three health-related websites. Each student wrote an evaluation of one site and added this to the wiki. As students carried out this task, the wiki built up into a set of evaluations of the websites. Using the contents of the wiki as a resource, each student then chose two of the websites, wrote a comparative evaluation of them, and submitted this as part of their block assignment.

5. Research approach

5.1. Data collection

The trial of wikis for online tutorials was evaluated using an online questionnaire to students, as well as seeking feedback from tutors. The student questionnaire provided both quantitative and qualitative data on students’ experiences and opinions regarding use of the wiki for online tutorials. The questionnaire also included questions on another tool which was provided within the university’s recently developed Virtual Learning Environment: a blogging facility. However, in the event, the VLE blog proved to be unsuitable for use in the online tutorials, because at that stage in its development it did not have a commenting facility. Therefore the wiki was the only tool which tutors offered to students for the tutorials. The online survey questions which relate to the wiki are given in Appendix A, together with the answer options.

The questionnaire contained two types of questions:

- Closed questions, where students selected one answer, or several options, from a list. In some cases 5-point rating scales were used, together with an additional category to indicate a ‘not sure’ response.
- Open questions, where students typed in free text responses. These were used to gain students’ views on specific aspects of their wiki use, and also to invite general comments.

After some initial questions to elicit demographic data, the questionnaire asked students whether they had used the wiki, and if so, what their views were on the experience. Students were also asked questions which compared use of the wiki with use of the FirstClass forums.

Although it would have been of interest to include students’ contributions to the online tutorials as part of the research data, this was not possible within the time frame of the project. Permission would have been needed from all the students in a group beforehand, and in the Open University’s distance learning setting this is difficult to achieve.

The nine tutors who took part in the project were each asked to provide a summary of their views on the experience, via a tutor-only online forum. They were also asked to report any feedback they had received from their students. The tutors were asked specifically to comment on the benefits, problems, and any improvements needed to the software.

5.2. Data analysis

The online questionnaire was made available to all students who took part in the trial and who also completed the course (111 students). Of these, 54 completed the questionnaire, giving a response rate of 0.49.

The questionnaire data were downloaded into a spreadsheet (Excel 2000, Microsoft, Redmond, Wash.), and the qualitative and quantitative data were analysed separately. Duplicate entries were identified and discarded (typically where a respondent made a number of false starts) with the most complete entry being retained. The number of responses was recorded for each day after the questionnaire was posted online. The data were collected over a period of about 2.5 weeks, with 90% of responses arriving by day 11. The quantitative data from the online questionnaire were analysed using spreadsheet-based pivot tables to aggregate and tabulate data, and investigate relationships between variables. Chi Squared or Fisher’s exact tests were used as appropriate to test significance of grouped discontinuous data (Stats Direct, Cheshire UK.) For all tests, the confidence level for significance was 95%.

6. Quantitative findings from the student questionnaire

6.1. Demographic and background data

Fig. 1 shows the age and gender distributions of respondents to the questionnaire. The majority of the respondents who gave their gender were male (66%), and most respondents were under 40 years of age (65%). There were 1260 students enrolled on the course over the period of the study, with 72% male and 74% under 40 years of age. Thus, the sample, though reasonably representative of the course cohort, showed some bias towards females and older students. The percentage differences in gender were not significant (Chi squared, P > 0.05).

The Open University has an open entry policy, which means that students have a wide range of prior educational experience. Table 1 shows the distribution of highest educational experience in the sample of students who responded to the survey. The various educational levels are relatively evenly spread, though with more respondents in the ‘Further education’ category.

FirstClass forums can be accessed using either a client interface or a browser interface. The client software has more functionality than the browser interface, and also gives a faster response. In the
questionnaire, students were asked which of these interfaces they mainly used. Nearly half the respondents reported using the client software, and slightly fewer used both the client and the browser. Students who used both interfaces probably did so because they needed to access the forums from different locations (e.g. at home and at work). Only 6 of the 54 respondents used just the web interface. In relation to the speed of students' internet connections, it was found that older students tended to have slower connections (e.g. dialup or slow broadband rather than faster broadband). Connection speeds below 100 kbps could result in an unacceptably sluggish performance from the wiki. The need for fast connection speeds to obtain acceptable performance in wiki-based activities means that, in a distance learning context, students who do not have access to high-speed connections are likely to be disadvantaged.

6.2. Students’ use and perceptions of the wiki

Table 2 gives a breakdown of respondents’ wiki use for the two online tutorials. Several tutors chose not to offer the wiki for the Block 4 tutorial, because they found using the wiki too time-consuming. For each online tutorial, the questionnaire asked students whether they were offered the wiki, and whether they had used it. For the Block 3 tutorial, 44 of the 54 respondents used the wiki. For the Block 4 tutorial, 23 did so, with all but one of these students having previously used the wiki for Block 3. Taking into account only those respondents to whom the wiki was offered, Table 2 shows a drop in the percentage of students using the wiki in Block 4, compared with Block 3.

Students who had used the wiki for the Block 3 or Block 4 online tutorials were asked to express their views about the experience, by agreeing or disagreeing with a number of statements. Table 3 shows the responses to each statement for the two online tutorials. In each case, the figures are given as a percentage of the number of students who used the wiki for that tutorial. The smaller numbers participating in the Block 4 tutorial (n = 23) mean that the results are less robust than for Block 3 (n = 44).

As Table 3 shows, for the Block 3 tutorial a large majority of respondents enjoyed using the wiki. For the Block 4 tutorial this decreased to just over half, possibly because the novelty value had reduced. Some students found the wiki difficult to use, and this difficulty did not reduce with experience. In Block 3, a small proportion of students were confused or irritated when others edited what they had written. In Block 4 the confusion disappeared, but the degree of irritation remained. In Block 3, almost a third of the respondents were unhappy about editing other students’ work. However, by Block 4 this concern had reduced. For both online tutorials, just over half of the respondents indicated that they preferred using forums for collaboration.

Students were asked a number of questions comparing their experience of using the wiki with their experience of forums, in terms of three aspects of usability:

• time to learn;
• time to edit and post contributions;
• ease of use.

Fig. 2 illustrates students’ responses to these questions. In this figure, more responses lie to the left of the ‘about the same’ mark, suggesting that students’ perceptions of the wiki were less favourable than their perceptions of the forum, in terms of usability.

7. Qualitative findings from the student questionnaire

Qualitative data was obtained from students via open questions in the questionnaire. These asked students for their comments on using the wiki for the online tutorials, and their thoughts on whether they would use the wiki again. There was a fairly wide set of views expressed, with the main areas of comment as follows.

7.1. Benefits of the wiki

Several students gave positive comments on using the wiki, and reported finding the experience interesting and enjoyable.

“Yes I’d use it again. It was good fun to edit other people’s work and contribute to a group-produced document.”

Some students commented on the value of a wiki as a tool for creative collaboration, and particularly for developing a shared document.

“Wikis are something that has good potential. They make it easy to collaborate jointly on documents which has always been a bit of a logistical nightmare.”

Table 2

<table>
<thead>
<tr>
<th>Proportions of respondents who used the wiki.</th>
<th>Block 3</th>
<th>Block 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents who were offered the wiki for the tutorial (n)</td>
<td>52</td>
<td>41</td>
</tr>
<tr>
<td>Respondents who used the wiki for the tutorial (n)</td>
<td>44</td>
<td>23</td>
</tr>
<tr>
<td>Percentage use by those who were offered the wiki</td>
<td>85%</td>
<td>56%</td>
</tr>
</tbody>
</table>

Table 3

<table>
<thead>
<tr>
<th>Respondents’ views on their use of the wiki for the online tutorials. (n = number of respondents who used the wiki for the specified tutorial).</th>
<th>Block 3 tutorial (n = 44)</th>
<th>Block 4 tutorial (n = 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoyed using the wiki (%)</td>
<td>73</td>
<td>57</td>
</tr>
<tr>
<td>Found adding new material to the wiki easy (%)</td>
<td>70</td>
<td>48</td>
</tr>
<tr>
<td>Found adding new material to the wiki difficult (%)</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Found it confusing when other people edited what I had written (%)</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Felt irritated when other people edited what I had written (%)</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Did not feel happy about editing other people’s work (%)</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>Preferred to use forums to collaborate with others (%)</td>
<td>52</td>
<td>52</td>
</tr>
</tbody>
</table>
Other positive comments related to organizing and presenting ideas, and communicating these to others.

“Yes I would use the wiki again as I thought it was a really good way to get ideas and thoughts organised.”

7.2. Usability problems

Students who displayed a negative view of the wiki primarily did so because of problems related to usability or lack of functionality.

“Yes I’d use it again, but it’s not an easy system to use.”

Several students said that they could not do what they wanted, either because they could not find a way to do so or because the capability was not present.

“It was difficult formatting text as there seemed to be a default type/size. Separation of messages needs to be better. Placing images is difficult — I’m convinced some buttons were missing. Help files need improving.”

7.3. Social discomfort

There were a number of comments related to lack of participation in the online group activities. Although this issue applies to any type of collaborative work, negative perceptions of the wiki may have discouraged some students from participating.

“I found the wiki very impersonal and tended not to use it for anything other than the tutorial.”

The open nature of the wiki caused students some concern.

“I would not use it, it is not secure enough for me. I felt it was too open allowing anyone to modify it without my knowledge.”

Several students said they were unhappy that others could edit their work and that they could edit the work of others.

“Don’t like having the option of editing other people’s work — why??”

This second point is related to a more general concern often expressed by students when they are asked to comment on each others’ work. It was apparent that some students worried about upsetting or offending each other.

7.4. Further requirements and functionality

A number of students pointed out specific facilities which were missing from the wiki, and which they felt were needed. In particular, students wanted to know when a new contribution had been added, and who had viewed contributions. Students were familiar with these features from their use of FirstClass forums. The FirstClass system highlights any new messages and also offers a ‘history’ facility to show who has read a message and when.

“No immediate way of knowing if new messages are present, without opening the wiki up and searching all the headings — time-consuming. No history — can’t see who is present, who has read the messages — very frustrating.”

“I preferred the first class tutor group conference to collaborate with others in my group, mainly because it was easier to access and quicker to use, but mostly because in First Class it is very easy to see any new messages people have added.”

It is likely that prior use of FirstClass influenced students’ expectations of the wiki. Some students may have preferred FirstClass because they were already familiar and comfortable with it. However, students’ comments suggest that, at the time of the project, FirstClass was genuinely easier to use than the wiki, and had better functionality. This is further supported by the quantitative data from the questionnaire, where only 6 of the 54 respondents said they found the wiki easier to use than the FirstClass forum, whereas 26 said the forum was easier.

8. Feedback from tutors

The tutors who took part in the study each provided a brief summary of their views, and any feedback they had received from their students. The tutors were asked to comment on the benefits and problems of the wiki, and any improvements that were needed. They were also invited to provide other comments on the trial as a whole. The feedback from tutors is summarized below.

8.1. Benefits of the wiki

The tutors considered that (subject to the caveats in the next section) the wiki offered a number of benefits for students and also for tutors. They felt that a wiki was a better tool than a forum for groups or pairs of students working on a document, because it was easier to follow the work and see what different people were doing. They liked the idea that the document built up over time and was easily updated. They felt that a wiki could be a useful facility for tutors when providing information for their groups, as well as being a useful tool for students. Having everything all in one place was seen to be an improvement, compared to a series of forum messages. Tutors also thought that the wiki document looked more professional.

8.2. Problems with the wiki

The tutors pointed out a number of problems with the wiki. Many of these related to usability or missing functionality. These issues included: slow response; problems copying and pasting; difficulties inserting images; lack of tools for editing; occasions when edits were unexpectedly lost; and the lack of a straightforward method for creating new pages. These problems have largely been addressed in more recent versions of the wiki software. Other comments related to difficulties in marking and monitoring students’ work. For example, in the peer feedback activity for Block 3, tutors found it difficult to keep track of students’ draft and final versions. Even using the wiki ‘History’ facility, tutors reported difficulties working out who had done what and when. Generally, tutors found it time-consuming to: learn how to use the wiki; set up the activities; monitor participation.

Tutors also commented on issues related to students modifying each others’ work, especially work for an assignment. They suggested the need for a cultural shift among students, who currently seemed unhappy with the prospect of editing others’ contributions. The
tutors suggested that a discussion facility was needed within the wiki, so that students could comment on each other's contributions, and explain any changes that they made. This facility has subsequently been implemented. Tutors were also concerned that students might inadvertently overwrite others' contributions (requiring the tutor's intervention to revert to the original version). They suggested the need for an author-only editing mode. This could be useful for protecting content of the wiki that should not be changed by students.

8.3. General feedback from tutors

The tutors pointed out that it was important to select communication tools to suit learning activities and vice-versa. It was not seen as helpful to simply run activities designed for forums using a wiki. Instead, new activities should be designed which make best use of the wiki's facilities.

The tutors were concerned that students should have safe, private online spaces to work in. This was particularly important when students were using new communication tools, in order to develop confidence. There is a need for controlled access to the wiki, so that students feel comfortable trying things out in a supportive environment. A further suggestion was that there should be an 'ice-breaker' activity with the wiki before it was used as part of an assignment.

Tutors were also concerned about overloading students and tutors with new tools and activities. They were worried that the new communication tools might add confusion, when there were already several different places to look for information and communications related to the course. In particular, tutors warned against duplication of facilities already provided by forums — and they did not want to lose the forums.

The comments above are all indicative of the tutors' aims to build students' confidence through course activities. Tutors commented that software which was not sufficiently mature risked undermining this confidence, particularly if the students were not yet technically adept. It was therefore important that new tools should be implemented at an appropriate stage in the tools' development, and that they should be well integrated into the course.

9. Discussion

The findings of the project show that students valued the opportunity to use a wiki. Most students enjoyed the experience, and felt that the exercise was well suited to the course. Students and tutors thought that wikis were of value for collaborative learning, particularly when this involved developing shared documents. They appreciated the facilities wikis offer for keeping information organised, updated and visible to all. This is consistent with the claim of Trentin (2009) that students working in a wiki are encouraged by:

‘being able to constantly check the work’s state of progress’ (p. 45).

However there were usability problems with the wiki, which were frustrating and time-consuming for students and tutors. As a consequence of these difficulties, some students and tutors who used the wiki for the Block 3 tutorial chose to revert to First Class forums for the Block 4 tutorial, and most students reported preferring forums for collaborative work. The feedback obtained from students and tutors emphasised the need for software tools to be robust, reliable and responsive (fast) for all users, so that those with less advanced technology or slower connection speeds were not disadvantaged. Students also identified functionality which they found valuable from their experience with forums, but which was missing from the wiki. For example, they wanted to see easily any new contributions that had been made, and to know when other students had viewed contributions.

In addition to issues of usability, the research highlighted social aspects of online communication. Preece (2000) characterises these aspects using the term ‘sociability’, which she relates to ‘purpose, people and policy’ (p. 80). For example, the findings of the current study suggested that students missed the interactivity and sense of community which can develop in a forum. This is in line with results from Hemmi et al. (2009) who reported that some students found wikis:

‘strangely lonely, less interactive and less of a ‘community’ space than the conventional discussion board’ (p. 27).

Another issue which was highlighted in the current study was access control and the ‘open’ nature of the wiki. Students and tutors felt that contributions should be kept within the tutor group, rather than being open to all students on the course, or even to all web users. The tutors commented that, when students are experimenting with new communication facilities and learning new concepts, it is important that they are in a safe, enclosed environment, so that they can develop confidence.

The research revealed that some students were concerned about the prospect of editing others' work in the wiki, and having other students edit their own contributions. These issues have been reported by other researchers in relation to students' work in a wiki. For example, Hemmi et al. (2009, p. 28) quote a student's comment about working in a wiki:

“In thinking about editing the text produced by someone else — I felt a considerable reluctance. It somehow seemed unacceptable to mess around with someone's work... if only I can allow myself more latitude to alter what is there without feeling I'll give offence!”

Wheeler et al. (2008, p. 992) comment that:

’s Students tend to protect their ideas as their own work, and although happy to post their contributions to a wiki space for other group members to read, they are resistant to having their contributions altered or deleted by other group members.’

These issues are not entirely restricted to wikis: students often express concern and uncertainty when asked to critique each others' work. However, the facility to actually edit a fellow student’s contributions was novel to most of the learners in the current study. They were more familiar with interacting via forums, where each person’s postings cannot be changed. With time, students became more comfortable with the idea of modifying each others’ contributions. However, these issues need consideration, particularly when contributions to a wiki form part of the course assessment. When students first start to use a wiki, it would be helpful for tutors to discuss with them the purpose and nature of this form of collaboration, and the ‘etiquette’, rules and strategies which can be adopted for collaborative writing (Hemmi et al., 2009; Trentin, 2009).

10. Conclusions

The project reported in this paper has provided an evaluation of a wiki as compared with a forum for online tutorials in a distance learning course. The research has thus contributed to an improved understanding of the different characteristics, benefits and problems of wikis for collaborative learning. It was found that students and tutors valued the facilities provided by the wiki for collaborative working on shared online documents. However, there were issues related to usability and sociability which caused difficulties for students and tutors.

More than half the students reported preferring a forum to the wiki. This may be partly because the students were already familiar with forums, but it also relates to differences in the usability, functionality and purpose of the forum and the wiki. Some tutors found the wiki to be too slow to use effectively, and had difficulties monitoring students’ participation. The feedback obtained from students and tutors underlines the need for collaboration tools to be robust and responsive, and to exhibit good usability.
A significant issue revealed by the research was students’ concern about editing each others’ work in the wiki. As some tutors in the study commented, there is a need for a cultural shift in students’ attitudes when the move is made from a forum to a wiki. Roles, norms and ‘etiquette’ need to be discussed beforehand, so that students are willing to edit others’ work, and are comfortable if their own contributions are changed. In line with the work of Preece (2000), the research reported here highlights the need to attend to both sociability and usability when implementing new technologies for online collaboration in an educational context.

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## Appendix A

Questions and allowed responses used to ascertain students’ experiences of using the VLE wiki.

<table>
<thead>
<tr>
<th>Question</th>
<th>Allowed responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your gender?</td>
<td>Male; Female; I’d rather not say.</td>
</tr>
<tr>
<td>What is your approximate age?</td>
<td>20 years old or less; 21–30; 31–40; 41–50; 51–60; 61–60; 71 years old or more; I am not sure.</td>
</tr>
<tr>
<td>In which county do you live?</td>
<td>A list of UK counties sorted alphabetically</td>
</tr>
<tr>
<td>What is the highest level of education that you have completed?</td>
<td>Secondary school; Further education (e.g., 6th form college); Vocational higher education (e.g., community college); Traditional higher education (e.g., a university); I don’t know.</td>
</tr>
<tr>
<td>What is your internet connection speed?</td>
<td>56k or less using a dialup modem; More than 1024k broadband; I'm not sure.</td>
</tr>
<tr>
<td>Did you use the VLE for the block 3 online tutorial?</td>
<td>Yes, I used the VLE; No, I did not use the VLE because it wasn’t offered by my tutor; No, I did not use the VLE because I wasn’t aware of it; No, I did not use the VLE because I tried it and didn’t like it; No, I did not use the VLE because I didn’t have enough time to look into its use; No, I did not use the VLE because I had technical problems which prevented its use; No, I did not use the VLE because I didn’t think it was important; No, I did not use the VLE for another reason.</td>
</tr>
<tr>
<td>If you used the wiki or blog for the block 3 online tutorial, we would like to know more about your experiences. (Students were asked to check a box next to the statements opposite if they agreed with them)</td>
<td>I enjoyed using the wiki or blog; I found it confusing having other people edit what I had written; I felt irritated when other people changed what I had written; I did not feel happy about editing other people’s work; I found adding new material to the wiki or blog easy; I found it difficult to add new material to the wiki or blog; I never really mastered adding new material to the wiki or blog; I prefer to use the tutor group conference in FirstClass to collaborate with others in my group; Wikis and blogs are good ideas, but the current OU systems are difficult to use; I don’t think I could ever be comfortable using a wiki; I don’t think I could ever be comfortable using a blog.</td>
</tr>
<tr>
<td>If you have any other comments you want to make, please type them into the box below</td>
<td>A text box was provided for comments, with a 500 character limit.</td>
</tr>
<tr>
<td>Did you use the VLE for the block 4 online tutorial?</td>
<td>Yes, I used the VLE; No, I did not use the VLE because it wasn’t offered by my tutor; No, I did not use the VLE because I wasn’t aware of it; No, I did not use the VLE because I tried it and didn’t like it; No, I did not use the VLE because I didn’t have enough time to look into its use; No, I did not use the VLE because I had technical problems which prevented its use; No, I did not use the VLE because I didn’t think it was important; No, I did not use the VLE for another reason.</td>
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<tr>
<td>If you used the wiki or blog for the block 4 online tutorial, we would like to know more about your experiences. (Students were asked to check a box next to the statements opposite if they agreed with them)</td>
<td>I enjoyed using the wiki or blog; I found it confusing having other people edit what I had written; I felt irritated when other people changed what I had written; I did not feel happy about editing other people’s work; I found adding new material to the wiki or blog easy; I found it difficult to add new material to the wiki or blog; I never really mastered adding new material to the wiki or blog; I prefer to use the tutor group conference in FirstClass to collaborate with others in my group; Wikis and blogs are good ideas, but the current OU systems are difficult to use; I don’t think I could ever be comfortable using a wiki; I don’t think I could ever be comfortable using a blog.</td>
</tr>
<tr>
<td>If you have any other comments you want to make, please type them into the box below</td>
<td>A text box was provided for comments, with a 500 character limit.</td>
</tr>
<tr>
<td>How do you access FirstClass?</td>
<td>I use the FirstClass client software; I use a browser such as Internet Explorer; I use both the browser and the client software; I use FirstClass personal (an offline reader); I use FirstClass personal and a browser;</td>
</tr>
</tbody>
</table>
Appendix A (continued)

<table>
<thead>
<tr>
<th>Question</th>
<th>Allowed responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinking about the time it took to learn to use FirstClass and time it</td>
<td>I am not sure. It took a lot more time to learn the wiki; It took a bit more time to learn the wiki; It took about the same time to learn each;</td>
</tr>
<tr>
<td>took to learn to use the wiki did you think that:</td>
<td>It took a bit more time to learn FirstClass; It took a lot more time to learn FirstClass; I am not sure.</td>
</tr>
<tr>
<td>Thinking about the time it took to edit and post a message to the wiki,</td>
<td>It took a lot more time for the wiki; It took a bit more time for the wiki; It took about the same time for each; It took a bit more time for FirstClass;</td>
</tr>
<tr>
<td>do you think:</td>
<td>It took a lot more time for FirstClass; I am not sure.</td>
</tr>
<tr>
<td>Thinking about the editing and formatting features on the wiki, did you</td>
<td>The wiki had all the features I wanted; The wiki had most of the features I wanted; The wiki had few of the features I wanted; The wiki had none of the</td>
</tr>
<tr>
<td>think that:</td>
<td>the features I wanted; I am not sure.</td>
</tr>
<tr>
<td>Compared with FirstClass, did you find that the wiki was:</td>
<td>A lot easier to use; A bit easier to use; About the same; A bit more difficult to use; A lot more difficult to use; I don’t know.</td>
</tr>
</tbody>
</table>

References