Discussion Across Borders: benefits for collaborative learning

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Abstract

Online learning is facilitated by various forms of computer-mediated communication (CMC). In higher education CMC presents an opportunity to expand the learning community, even across national borders. In this paper we report on two cycles of action research into the use of online discussion forums to enable groups of students from different countries to collaborate with each other in achieving learning outcomes specific to each group. Our research data was obtained from questionnaires and focus groups with students and analysis of the content of the online discussion.

The discussion was focused on the evaluation of prototype learning systems, produced by one group of students and evaluated by groups from two institutions in different countries, each of which had different, yet reciprocal, objectives to achieve from participating in the activity. The findings highlight the potential complexity of such an asymmetric collaborative activity, but indicate several advantages to students when the activity forms a distinct part of the pedagogical framework of their modules.

For tutors planning similar trans-national collaborations, we offer guidelines that incorporate the findings from our research.

Introduction

Information systems that deliver and support online learning are a growth area: in schools and universities, e.g. the National Grid for Learning (NGfL, 2002); industry, e.g. the corporate universities and colleges; and in society in general (Leadbeater, 2000; Maule 1997; UfI, 2002). Since online learning is less constrained by time and space, students and lecturers have the opportunity to expand the learning community, even across national borders and time zones, without incurring the time and financial costs of student and lecturer exchanges, (Slavin, 1990). In this paper, we reflect on the implications for students and lecturers of online trans-national student collaboration between students from the Information Systems Institute (ISI) at Salford (in the North West of England), Instituut voor Information Engineering (IvIE) at Almere in Holland, and University of Applied Sciences – Hochschule der Medien at Stuttgart in Germany. The collaboration was initiated from lecturers' networking at a conference who discovered that they shared an interest in critical reflection. The collaboration was later extended to include a University whose students had visited the ISI. The original concept was for the student groups from different countries to engage in mutual evaluation of each other's work to increase the authenticity and value of the evaluation from the student perspective. (Cowan, 1998; Nightingale & O'Neil, 1997). It is collaboration by means of mutual evaluation that is the subject of this paper, and we give an analysis of two case studies from the perspective of our institution.

Research Issues and Methods

We wished to explore the outcomes of the online discussion and exchange of feedback between groups of students from different countries and with different experiences and learning goals. Our intention was to explore the implications of trans-national student collaboration, from the perspectives of staff and students, and to try to identify guidelines to assist those engaging in such an activity. Recognising the complexity of our task, we chose a recognised network learning pedagogical model that we have adapted for our purposes. Whether one is viewing reality subjectively, as socially constructed, or objectively as being independent of observer or social context, affects the way one understands learning and designs tools for its support. Goodyear et al conceptualise the constructivist shift (see Figure 1) that is involved in networked learning as a spectrum to explore the nature of the change, rather than a description of a dramatic conversion, (Goodyear, 2001). Goodyear and Stone identify a third position, where we can blend elements from a 'realist' epistemology and a constructivist understanding of learning, (Goodyear & Stone, 1992). This is the approach that we adopt, pragmatic and pluralist, and hence we utilise quantitative and qualitative research data; questionnaires, surveys and analysis of discussion transcripts and reflective reports.

As a team of module lecturers and evaluator, the Action Research (AR) approach offered us support for achieving problem-solving for the project, and for testing and generating theory, (Baskerville, 1999; Mumford, 2001). In AR, the researcher is simultaneously participating in a collaborative venture to create organisational change, and studying the process of that change, (Avison, Baskerville, & Myers, 2001). AR is essentially cyclical in nature, e.g. Checkland's Framework for AR, (Checkland & Holwell, 1998), and Susman and Evered's 5 stage AR Process, (Susman & Evered, 1978). In order to clarify validity claims, twin cycles of problem-solving and research have been identified, (McKay & Marshall, 2001). This fits our pragmatic approach.

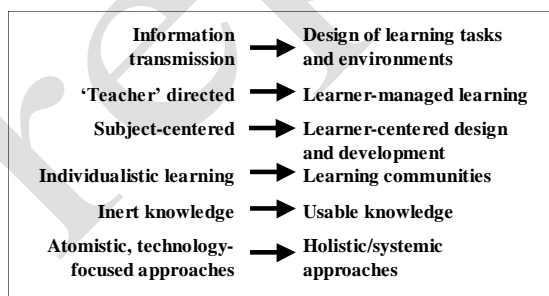|	
Information transmission	→ Design of learning tasks and environments
'Teacher' directed	→ Learner-managed learning
Subject-centered	→ Learner-centered design and development
Individualistic learning	→ Learning communities
Inert knowledge	→ Usable knowledge
Atomistic, technology-focused approaches	→ Holistic/systemic approaches

Figure 1 - The Constructivist Shift, after Goodyear

The discussion tool that we used provided transcripts of student discussions. After the collaborative exercise was over, all students involved were asked to complete short questionnaires on their perceptions of the collaboration. Student discussions using the conferencing tool were subject to quantitative analysis of online activity.

Focus groups were organised at Salford to identify students' comments and suggestions. In addition, since DTLS students provided a personal reflection as part of their assessment, these were inspected to provide additional insights.

Electronic mail and reflective asynchronous discussion between tutors was also recorded and analysed.

Theories and literature review

In this section we draw on theories of learning, working in groups and pedagogy that have informed the design and analysis of our case. When we read case studies of the

use of information and communications technologies (ICT) in education and training, we can see that in some cases the focus is on ICT as the *medium*, such as distance learning applications where tutors and students are separated in time and space and can enrich the distance learning experience with CMC and online resources; and in others the focus is on ICT as the *message*, such as campus-based modules on virtual working (Tiwari & Holtham, 1998), or the DTLS module in our case. Often when ICT is the message, tutors decide to use it as the medium too – a decision which can be open to question. An *assumption* that such modules should use ICT suggests technology as a solution looking for a problem, whereas the use of technology should be driven by user needs (Boddy & Tickner, 1999), and cannot be regarded as a panacea, (Hara & Kling, 1999).

Watson-Mannheim et al reviewed the literature on Virtual Working, using the concepts of discontinuity (lack of coherence in work aspects) and continuity (factors that bridge discontinuities). Continuities can pre-date virtual work or emerge during it as a response to discontinuities, i.e. continuities as "Constancy in a sea of change" ,(Watson-Manheim, Chudoba, & Crowston, 2002). . They found that their framework (of which these concepts are a part) helped support a more systematic understanding of research and practice in this area.

Reflection and Evaluation

Kolb's cycle stresses the role of reflection in learning, (Kolb, 1984). A benefit that can be achieved in asynchronous media, such as computer-mediated conferencing systems, is that there are increased opportunities for reflection and evaluation, (Goodyear, 2001). Since contributors have time to reflect on the contributions of others and time to compose their own contributions, the interaction can be richer, (Goodyear, 2001). Schon's work reminds us that such learning can occur outside formal education with reflective practice (Schon, 1983), and there is some evidence that this can happen not only in face to face but also in virtual settings (Manheim & Watson-Manheim, 1999).

Software is subjected to evaluation during and after its development. Users' or surrogate users' evaluation can identify gaps between the designer and user views of software in terms of functionality, interface and holistic attributes, (Desanctis, Snyder, & Poole, 1994) that can be used to modify software during its development, or choose between already developed software packages.

Collaboration in Learning

Myers distinguishes between cooperative and collaborative learning. Both are social, group-based approaches. Cooperative learning focuses on the product, relating more to foundational knowledge, and can be seen as teacher-oriented whereas collaborative learning focuses on the process, sees knowledge as authenticated by the learning community, and is learner-centred, (Myers, 1991; Panitz, 1996). Myers identifies a middle way, called the "transaction" approach where we recognise the existence of the curriculum, but expect students and teachers to engage in a dialogue with it, in tune with Goodyear and Stone's third position, (Goodyear & Stone, 1992).

Slavin identifies the promotion of cross-cultural relations as one of the benefits of cooperative learning, (Panitz, 1996). Assessed tasks tend to be more structured than totally learner-managed ones, and may inhibit the development of a learning community but we should seek to achieve 'facilitative' rather than constraining structure (Morgan & O'Reilly, 1999).

Goodyear's definition of networked learning stresses the role of ICT in promoting a variety of connections between members of a learning community and its learning resources, (Goodyear, 2001). Learning communities are emergent rather than designed and students will be members of different groups in which learning may occur.

Situatedness, the removal of the separation between knowing and doing, is important in the development of robust, usable knowledge, (Brown, Collins, & Duguid, 1989). As well as *situatedness*, *commonality, interdependence* and *infrastructure* are seen as important aspects in the creation of a vibrant online learning community. Hung builds on Vygotskian principles to explore the social learning that can take place in such communities. Commonality starts as shared purpose but can progress to a shared group identity and norms; interdependence refers to differential expertise and contributions within the community; and infrastructure includes rules and mechanisms to support the process of learning, (Hung & Chen, 2001).

Pedagogical Model for Networked Learning

Goodyear offers a pedagogical model for networked learning, (Goodyear, 2001) to inform networked learning projects of varying scope. The model has three main elements: pedagogical framework (covering philosophy, pedagogical strategy and tactics), educational setting, and organisational context. Since each of these differs for the different groups in our collaboration, we have adapted the model to accommodate trans-national collaborations of students studying different subjects, as in our case study. Figure 2 highlights that two groups of students can share a networked learning activity in a shared technical environment but pedagogical framework, tasks and learning outcomes can all differ. This allows us to stress the interdependence of the different groups of students.

Case Study

Initiation

A meeting at a conference between the authors and a German colleague presented the opportunity for trans-national collaboration between campus-based student groups in Germany and Salford. DTLS, the module studied by the Salford students in this case study, already offered students a combination of face to face and distance learning experiences. The rationale for this is to give students the opportunity to experience some of the complexities of studying an online course, whilst maintaining campus-based interaction. Learning resources are presented online, and there are also scheduled face to face sessions and tutorials. Additionally, students meet face to face to collaborate on their group assignment, and have regular contact with each other and the tutor using the CMC tools for discussion, and electronic mail. Discourse in campus-based courses are traditionally rich because of face to face contact between community members, but we intended that students should evaluate whether the rich connections of face to face contact could be replaced effectively by online synchronous or asynchronous discussion.

One part of the Salford students' assessment was to develop a prototype teaching system on any subject of their choosing, which would be posted onto the module web site for evaluation. In the previous year, peer evaluation of one assignment group by another group had not worked satisfactorily within the DTLS module group, because the students knew each other well and were insufficiently critical. In addition the students did not use the discussion forum to post evaluations, as it was easier to talk

face to face. The Stuttgart student group were studying Multimedia, thus offering the possibility of interdependencies within the learning community, by including other learners with asymmetric learning goals.
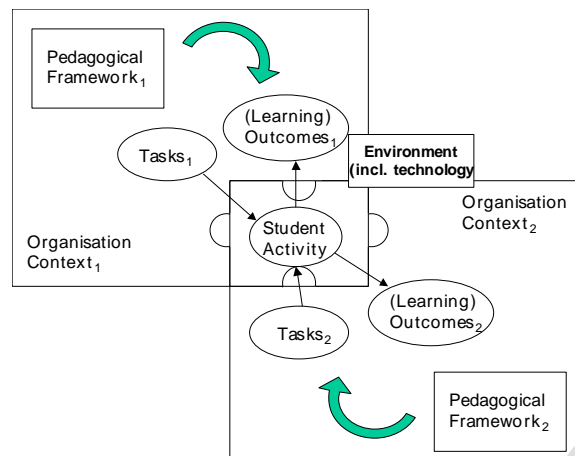

Figure 2 - Pedagogical Model for Trans-national Collaboration

A collaborative exercise between these student groups provided the desired alternative source of evaluation for Salford students' prototypes and allowed German students to practice Multimedia evaluation. The learning goals would be complementary, and reciprocal. In the case of the Stuttgart students they would be providing multimedia expertise to our students' web pages, and our students would be able to offer the German students some advice on designing multimedia applications for learning purposes. Thus the exercise would bring about an extension of individual learning communities and their learning resources into a more interdependent learning community

Year 1

The intended collaboration is shown in Figure 3. The Stuttgart students were due to enrol on a Multimedia module in the spring. Across Europe, there are differences in the start dates and duration of teaching periods, whether called terms or semesters. In addition, the national holidays that form the vacation periods for students differ between countries. Having taken these factors into account, dates for the collaboration exercise were set.
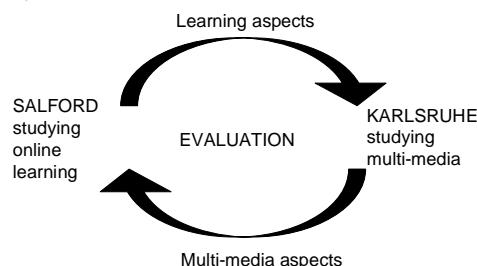

Figure 3 - Intended Collaboration

In the event, the planned Multimedia module at Stuttgart did not run due to insufficient enrolment, leaving the Salford students without their complementary group of students to carry out the evaluation. Fortunately, at the same time we were in contact with a party of visiting students from the Instituut voor Information Engineering at Almere in Holland, and at the last minute the services of a large group of their students were enrolled to salvage the collaboration exercise.

The Almere students had obviously not had this collaborative exercise planned into their module, but it was agreed that as an incentive to encourage them to participate fully in evaluating the Salford students' prototypes, all communication between the two groups of students would be in English, and the transcripts would be used as part of their English language assessment. In this way, there was asymmetric reciprocity, with both parties benefiting, though in different ways.
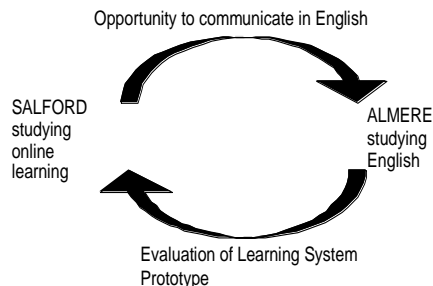

Figure 4 – Actual Collaboration

As Figure 4 shows, what we lost in this substitute activity was the mutual evaluation. The Salford students had clear expectations of receiving evaluations of their prototypes, whereas the benefits for the Almere students were in practising their English language skills, evaluated by their tutors rather than their peers at Salford. The prototype learning systems were posted onto the Salford module web site, with links to the prototypes and to a dedicated discussion forum for each prototype. Over a period of three weeks the students were encouraged to participate in discussion on their opinions on the web pages, queries they might have and suggestions for improving them. As the final part of the assessment the Salford students needed to reflect on the evaluation and prepare a report detailing what changes they would make to their prototype. Since the Almere students were studying a Human Computer Interaction module, their tutor suggested that HCI criteria might be appropriate for the evaluation.
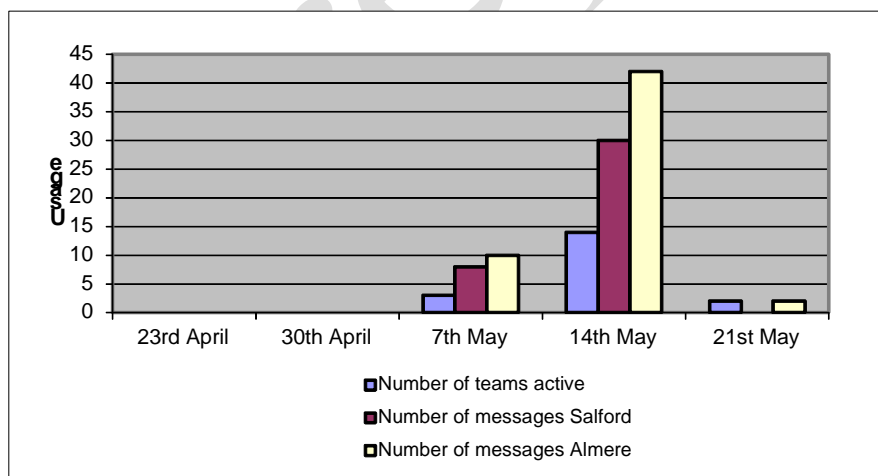

Figure 5 - Student Activity on Discussion Forum (first cycle)

The scheduled start of the activity clashed with a one week holiday at IvIE, so the discussions did not start until the third week, Figure 5. Most activity occurred during the fourth week, with only a few final messages in the fifth week. Despite the fact that the collaboration exercise happened very late in our students' teaching term, the

results were encouraging. The first active week, the third week, was occupied with introductions. For most groups one week was sufficient to give meaningful feedback. Not all of the groups were able to contact the students assigned for their evaluation, because there were technical hitches at both institutes during the period of the exercise.

Analysis of Year 1

Benefits

Using the adapted networked learning model (see Figure 2), we can see that there is a shared student activity, that is the online interaction between paired groups of students from Salford and Almere, with two distinct tasks. This duplication of elements certainly increases the complexity, and so we needed to examine carefully the advantages and disadvantages of such an activity. The asymmetry of learning outcomes can be an advantage, in that it encourages a more critical and authentic evaluation by using the interdependency of the student groups in terms of their different experiences and desired outcomes. As surrogate users of the software prototype, the Almere students were able to be more critical than fellow Salford students the previous year. As one student said:

"An authentically objective view of ones work by disinterested parties is refreshing, …. The presence of any feedback is welcome, particularly thoughtful and constructive criticism.."

The questionnaire results indicate that both sets of students feel there is an advantage to be gained from this sort of exercise, though each group believed that the students in the other institute gained a greater benefit than themselves.

Table 1 - Results of questionnaires from Almere and Salford students

	Salford		Almere	
Did you benefit from this evaluation exercise?	Yes 76%	No 24%	Yes 62%	No 38%
Did you feel that the evaluation activity was of benefit to the team of students in S / A ?	Yes 88%	No 12%	Yes 100%	No 0%
Do you believe that it is useful to collaborate with students in other centres?	Yes 92%	No 8%	Yes 92%	No 8%

Nature of the Evaluation

The transcripts of the discussion forums revealed significant disparity in the volume and quality of the evaluation discussions. Some groups received very expansive evaluation, whereas others received minimal feedback. Most discussion was limited to only a few messages being posted, though in a few cases communication was more extensive. But quantity was not necessarily related to quality and the Salford students began to engage with the evaluation process, asking for clarification of suggestions, or answering questions. The more motivated Almere students realised that the transcripts were important to their English assessment, and participated more willingly.

Reflection and evaluation was a theme that was studied and assessed on the DTLS module, and hence it is not surprising that this theme recurred in the feedback from Salford students. Because the collaboration with Almere was arranged at very short notice, Almere students were not initially given criteria for the evaluation. After

some time, one of the Almere tutors did distribute HCI criteria. There was some discussion as to how specific the instructions for evaluation need to be, and whether "typical user", HCI or multimedia evaluation is most appropriate. Our planned collaboration involved feedback on multimedia aspects, and the actual collaboration was a mix of HCI and user evaluation. The timing of the evaluation also impacts on the use that the prototype designers can make of the feedback.

Social Interaction

The focus groups confirmed that generally students were in favour of this sort of exercise, but those who did not participate were disappointed. They also suggested starting the exercise sooner so that socialising could take place, as suggested by Gilly Salmon on the five stage framework for e-moderating, (Salmon, 2000).

Learning Outcomes

The hurried arrangement of the substitute activity meant that there was no question of the staff from Almere having used the same pedagogical model to inform their design of the tasks for their students. Feedback from Almere students identified the need for their task to be more clearly defined. It is interesting to explore the nature of any collaboration between the two different groups of students. One of the main problems voiced by students was that there was insufficient time to hold a substantive discussion. There was a sense of commitment from some of the Salford students, who felt that they had to continue for the benefit of the Almere students' assessment. This highlights the disparity in task and outcomes for the two groups.

Assessment

The DTLS students were in their final year, seeking evaluation of assessed work that is a major component of a final year module, whereas the first year Almere students were being encouraged to participate in an exercise that, though assessed, was a last-minute addition to their English language module.

Additional Factors

To our cost, we found that having different organisational contexts and tasks has the risk of one group pulling out for reasons within their own organisation. Some Salford students viewed this as lack of planning on our part rather than being due to circumstances beyond our control. Interestingly, our salvage of the exercise relied on the chance that we had met the staff face to face just before the substitute collaboration.

The discussion forum we chose for this case is only one of several forms of CMC that may be used. Email was suggested by students, as they may prefer the less "public" nature of closed communication.   Some students suggested an exchange visit, which may indicate the attraction of face-to-face communication, or possibly a desire to travel. If the module material is embedded in a Virtual Learning Environment, there is the possibility of allowing students to choose from several different forms of asynchronous or synchronous communication tools.

The nature of a discussion forum means that from the teams at Salford usually only one member actually typed in the messages. We do not know whether this individual was transcribing the thoughts of all of the team members or simply expressing their own thoughts. Students told us that they had difficulty involving the whole of their team, especially given the time constraints. A synchronous discussion event may allow for a more inclusive and free-ranging discussion.

Some students enjoyed the opportunity to communicate with non-English speakers, but others suggested that a UK university would be preferable.

One Salford student with a visual handicap was disappointed not to receive any feedback, as she saw this a new opportunity, confirming that the rhetoric of widening participation is not always translated into reality, (Clegg & Steel, 2002).

Developing a Set of Guidance Points

Based on the feedback from this first cycle of the collaborative exercise, we reflected on the experience and elaborated a set of guidelines to inform our second cycle, see **Error! Reference source not found.**. We also sought to share these with tutors organising such collaborative exercises and receive their feedback. Hence we published the first cycle of the case study and the guidelines at conferences featuring the use of educational technologies, (Whatley, Bell, & Thissen, 2001; Whatley & Bell, 2002).

The following year we set about organising the same collaborative exercise, using these guidelines to inform our design. The following section summarises our experiences as the second cycle of the collaborative exercise took place.

Year Two

The second cycle of the collaborative exercise took place in the spring of 2002. The time schedule was planned to enable social interaction first, the learning outcomes for all sets of students were clearly defined, and assessment was built into the design of the exercise. Collaboration was set up between DTLS students from Salford and students from Almere and Stuttgart. This time the cohort from Almere were studying an e-commerce module and wanted to receive, in return, feedback on their prototype e-commerce web pages. The Stuttgart students were taking a multimedia module, and offered evaluation of multimedia aspects as an opportunity to practice such evaluations.

Unfortunately, we found that discussion between the Salford students and the Almere students did not get off to the start we had planned. The Almere students were slow to submit their web pages, and allow the Salford students to comment on them. By the third week of the exercise only half of the Almere teams had posted to the discussion forums, and then only briefly to introduce themselves (Figure). There was then a long pause before any meaningful discussion began to take place, and in the end only eight of the teams from Salford received any help from their appointed collaborating team. The teams from Stuttgart did, however, enter into meaningful discussions, though one team opted to communicate using email instead of the discussion forum.

Figure shows the number of active teams and the number of messages posted to the discussion forums over the weeks of the exercise. In spite of planning the activity to start early on with socialising this did not happen. The postings were all task related and mainly occurred in the last few weeks of the exercise. Technical difficulties with file servers over the Easter break also hindered discussion, particularly affecting the part-time students at Salford.

Analysis of Year Two

Benefits

There seemed to be a lack of enthusiasm for the exercise on the part of the Almere students, reflected also in the fact that none of them responded to the questionnaires,
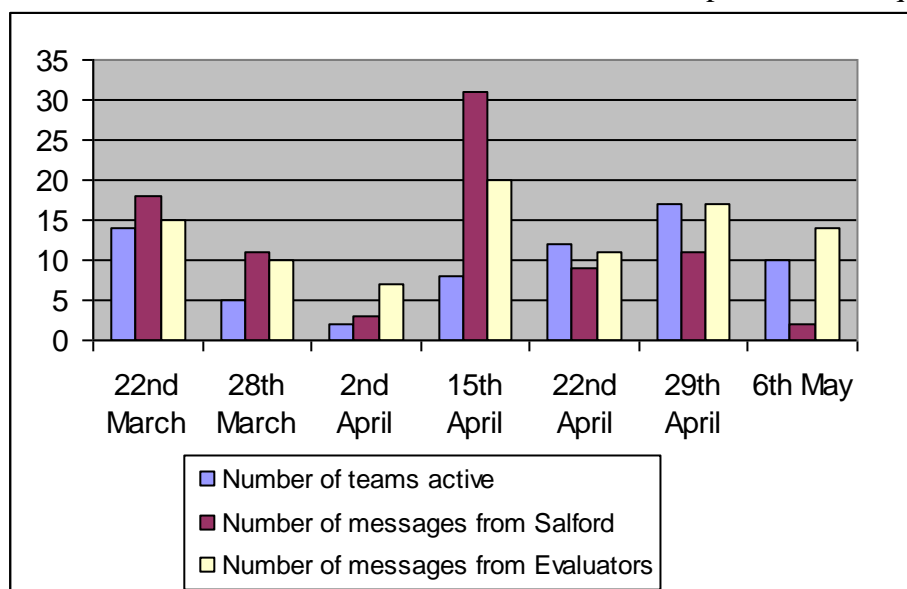

Figure 6 - Student Activity on Discussion Forum (second cycle)

and so it is difficult for us to comment on what benefits they perceived from the collaboration. The Almere students were offered the exercise as part of their non-compulsory Internationalisation program. An Almere tutor compared the exercises on each year as follows:

"Our first attempt at collaboration on your forum was in my opinion more successful. At that time the collaboration exercise was tied to a course module. Participation in the exercise was compulsory and course credits were awarded."

The responses from the students at Stuttgart were unanimously positive (Table 1 - Results of questionnaires from Almere and Salford students), reflecting their positive activity, for example these comments from some of the German students:

"Collaborations are so important, you have to collaborate all the time to find solutions to complex real-life problems. Such things can only be done by teamwork"

"I have learned how to give feedback to people I have not met before and who belongs to another culture"

The responses from Salford students showed similar satisfaction levels to last years'. Some of the comments from the focus group and from the students' final assessment indicate positive feelings towards the exercise, for example:

"I thought the discussion with the German student was very productive and enjoyable experience. We received lots of feedback from the evaluators both positive and negative"

Nature of the Evaluation

Some of the Salford students' comments reveal that the collaboration was a useful and valued activity for them. "I found this a particularly interesting and useful aspect of

the module. The independent assessment of our site was useful to gauge whether we had achieved our aims and goals."

Table 2 - Results of questionnaires from Stuttgart and Salford students

	Salford		Stuttgart	
Did you benefit from this evaluation exercise?	Yes 87%	No 13%	Yes 100%	No 0%
Did you feel that the evaluation activity was of benefit to the team of students in S / K ?	Yes 79%	No 8%	Yes 100%	No 0%
Do you believe that it is useful to collaborate with students in other centres?	Yes 92%	No 4%	Yes 100%	No 0%

"Subsequent feedback from the German group justified many of the points of our design, but also highlighted our lack of skills in some areas."
However, the quality of the feedback provided to the DTLS students was variable. There was clear evidence of good feedback
"Feedback received was quite good. There were many points raised that were missed or overlooked by the team…"
"When we did receive a reply it was informative to read and gave us a new perspective on how the prototype could be improved if it were to become a full working online learning system."
However, some feedback was less useful, suggesting that more guidance on how to give meaningful feedback could be a useful addition:
"We did receive feedback from the Dutch students but we felt it wasn't enough to carry out a thorough evaluation."
"The negative remarks posted by the teams reviewing our site were mainly concerning technical or grammatical errors."

Learning Outcomes

In both sets of group interactions, clear learning outcomes were identified for each group. However, there were differences between the Salford-Almere and Salford-Stuttgart collaborations. It seems where the benefits were symmetric, the outcome may be more like it was when the evaluation were done entirely within the Salford student group, as one student said:
"The Dutch evaluation was complimentary almost to a fault. When the team discussed what had happened we came to the conclusion that because we had been complimentary of their website they felt obliged to reply in a positive way. Whilst this may be ego boosting, it doesn't contribute to the development"
Superficially, the benefits in the Salford-Almere collaboration seemed to be more evenly matched but it did not in this case motivate all students to take part. There seemed to be less mutual benefit in the Salford-Stuttgart collaboration, but the German students were happy to participate in order to practice their Multimedia evaluation in English, and to help others.
"The Dutch students involvement in this course was, unfortunately, a failure. The idea of cross evaluation with foreign students is good but it failed due to, I suspect, the same reasons the virtual seminars did not work, general apathy to be involved with seemingly unimportant matters."
This student ascribes what he sees as the failure of the collaboration to apathy and the low value placed on the activity by the potential collaborators. Perhaps asymmetry of learning outcomes, with increased interdependence, makes for more authentic and situated collaboration that is valued more highly by the participants.

Social Interaction

Even though early socialisation was scheduled, it was not taken up by students in the Salford-Almere collaboration. There is considerable pressure on students' time, so exercises deemed as peripheral to the important work will be pushed to one side. As a result there was limited time to engage in constructive discussion. Once again students reflected after the event on the need for early socialisation
"Earlier interaction would have been better. More social communications. There would have been time if the technical breakdown did not happen."
It will be interesting to see if, as students become more experienced in online collaboration, they can close the learning loop and make time for socialisation.

Additional Factors

After the exercise was concluded, the Almere tutor revealed that the evaluation of their students' work by the Salford students post-dated the creation of the web site, and hence was not able to contribute to its improvement. Almere students were offering evaluation that was potentially of real benefit to the Salford students in their own assessed evaluations. This points to the mismatches that we have already observed in the benefits and nature of the evaluation, and possibly in the students' perception of the learning outcomes.
As well as varying levels of commitment being a hindrance, there were technical hitches that led to students using alternative tools for communication:
"We received a very short message from one Dutch student to which we replied requesting more feedback. He then replied to my email address as opposed to the forum, and voiced his preference in communicating via email"
"The exercise began in a positive way but then communication broke down along the way, as e-mails sent were not received."
Some students recognise the value of trans-national collaboration as a preparation for work in the European and Global context.
"One of the most pleasing experiences that I had was working with the Dutch students as it is the best example of the Internet and its abilities, as it allowed me and my team to interact with people that we never would have the chance to normally. The only thing was that the system was not that great, and this then meant that we were not able to evaluate their system. But we were able to check what they thought of our system by email. Though the language was a problem that we could not handle"
Not surprisingly, responses varied between the students at Salford that received feedback and had a good experience of the collaborative activity, and those students that did not receive feedback from the Almere students, who experienced frustration at the delays and who had to organise their own alternative feedback on their work. Supply of willing evaluators did not meet the demand for evaluation.

Discussion

Our initial literature review identified the links between reflection and evaluation, and the benefits of collaboration. We wished to explore whether we could enhance these activities by introducing the dimension of collaboration by dialogue, where the interlocutors may be practicing reflection, evaluation, the use of a foreign language or some other skill that may relate to the learning outcomes of their module. Reflection and evaluation in learning cycles is often posited at the level of an individual. Collaboration brings new opportunities and difficulties. Those students whose work was being evaluated recognised that external evaluation had benefits of perceived objectivity and constructive criticism that allowed them to improve their work. We introduced asymmetry of learning outcomes to avoid the discontinuity of uncritical

evaluation. In the first cycle, both Salford and Almere students stood to gain in terms of assessment but Table 1 confirms that both sets of students see the Salford students, whose work was being evaluated, as benefiting slightly more than the Almere students, who were getting practice in using English. This is a contrast to the second cycle where the limited participation by Almere students was noted by all tutors and the Salford students. What was different in this cycle was that the dialogue was not assessed for language skills, and that the opportunity for Almere students to benefit from external evaluation of their web sites was lost because of mismatch in assessment cycles. We have no questionnaire feedback from them but their tutor stresses the importance of tying the exercise to a compulsory credit-rated module. We can explain this by the discontinuities in time and of perceived value (in terms of marks) by Almere students, for which no continuity emerged. What we have learned from the Salford-Almere link over two years is that the activity should benefit both sets of students to promote collaboration, but that it is difficult to balance the benefits, and that they must be available and perceived to be of value by both sets of students. If we examine these two cycles in terms of the situatedness of the activity from the point of view of each student group, we can see that the Salford students were keen to receive evaluation to improve the quality of their assessed work for the DTLS module. It seems that assessment may help to situate the activity.

However assessment is not the only motivator, as we can see from the Salford-Stuttgart link in the second cycle. Both sets of students perceived the activity to be beneficial to themselves and to the other student group, see Table 2. Although the Stuttgart students were not directly assessed, there is evidence that they could identify and achieve real and valued learning outcomes in their practise of evaluation. Superficially, a discontinuity existed but the process and relationships were strong enough to overcome this, in a way that we do not fully understand.

In both years, students confirmed that earlier social interaction might have improved the subsequent dialogue. Although the opportunity for early interaction was slightly inhibited by technical hitches, it was not generally taken up by students. It will interesting to see whether or not students, in general, can operationalise this learning in future building of online relationships, or whether this is a case of human prevarication in the face of distant deadlines. There was some evidence that students appreciated the opportunity to engage with fellow students from another country. Some students recognise that the context of work, whether within a team or in customer-supplier relationships, is increasingly trans-national and hence value this aspect of the collaboration.

Our pedagogical model highlighted the differences in terms of pedagogical framework, learning outcomes and organisational context for a shared activity between different student groups. The pedagogical framework and learning outcomes were intrinsically important, and recognised by the tutors but not always by the students, except through the surrogate of assessment. The different organisational contexts became noticeable in problems such as different term dates, technical difficulties, and mismatch in the number of students in each group. Students sometimes perceived these problems as lack of planning but it may be fairer to recognise them as genuinely problematic and sometimes intractable issues. The pedagogical model (that shows only two student groups) illustrates the potential complexity of such shared activities.

In our Action Research, the twin cycles of problem-solving and research are clearly evident. By engaging in reflection, identifying guidelines after one year, and sharing such reflections at conferences we have shown the research cycle that has

accompanied the problem-solving cycle of setting up the trans-national collaborations and trying to make them work in the face of the practical difficulties we have described.

Conclusions

In this paper we have reported on two cycles of a trans-national collaboration exercise between students on campus-based courses. Whilst the collaboration exercise was well received by the students concerned, and regarded as beneficial by tutors, such exercises raise complex issues.

We have refined the guidelines that we developed after reflection on the first cycle, and present them as a set of guidance points (rather than prescriptive guidelines) to be used, in conjunction with the Pedagogical Model in Figure 2, by readers of this case study who may be planning similar collaborative activities, and from whom we welcome feedback. In this way, we hope that our work can contribute to the ongoing development of theory and practice in this area.

1. **The activity should benefit both sets of students in order to promote collaboration**

Potential benefits should be real and apparent to all student groups involved in the collaboration, although our experience indicates that participants tend to see themselves as deriving slightly less benefit than their collaborating partners. Asymmetry of purpose has permitted interdependent benefits for students. We have found that benefits are available to participants, although variable and not always as planned.

2. **Participation in the collaboration is affected by student motivation, assessment of the outcomes of the collaboration being one significant motivating factor**

We found that when the activity contributes to assessment, participation is encouraged but that other motivators may also play a part. We look forward to exploring this further in future work.

3. **It is important to situate the activity in the host module for each student group**

The activity should be situated within the host module with a clear purpose, for example as a task component of an assessed activity or to satisfy a learning outcome.

4. **Plan the shared activity to take account of discontinuities between the host modules**

It has proved a real challenge to situate the activity in the host module for each group of students whilst taking account of the differences in pedagogical and organisational arrangements. Students are encouraged to build up an online relationship and conduct the collaborative activity within more complex time constraints.

5. **The added dimension of a different language/culture offers general and pedagogical benefits**

In trans-national collaborations, acquisition of foreign language skills is a pedagogical benefit but students also valued less tangible cultural benefits to be obtained in with students from other countries.

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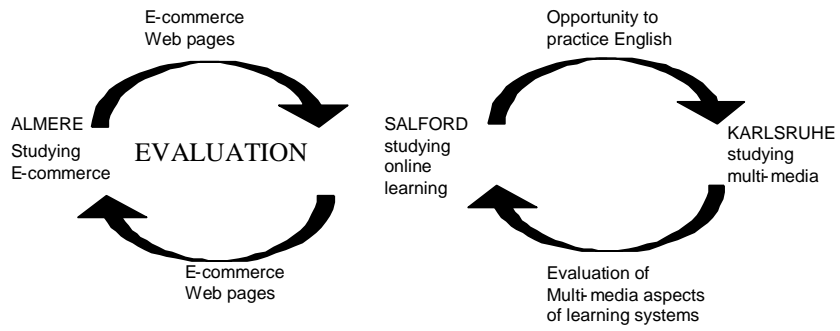
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Figure 6 – Year Two Collaboration