

Understanding students' experiences of collaborative networked learning

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This paper explores students' experiences of collaborative learning mediated by a computer conferencing system. The paper presents initial findings from a set of interviews carried out as part of the JISC/CALT project Networked Learning in Higher Education. The paper examines students' work on a collaborative assignment as part of a distance learning course using individual interviews. The methodological approach adopted is broadly phenomenographic (Marton 1994). In addition to interview data the author was the local tutor and observed the course in progress. The paper complements a recent research report, which provides an overview of the course and places the project assignment in the overall course setting (Kear and Heap 1999).

The paper explores the relationship between course content and the process of work. It examines the assessment criteria and interpretations made of them by students. It goes on to examine the variety of interpretations that the students had and what impact it had on their assessed work. This is complemented by comparison with the work done by students working collaboratively in a place based setting (Jones and Cawood 1998). In particular the use of available technologies is explored and the ways in which students bring together the variety of communication channels that are available. It is noted how students use communications outside the conferencing system despite explicit instructions to work within the system.

Introduction

This paper arises from the work of the JISC/CALT-funded 'Networked Learning in Higher Education' project. Networked learning is a term that has had a currency for some years and can be seen as part of a new paradigm in education (Harasim 1995; Koschmann 1996; Romiszowski and Ravitz 1997). We have defined networked learning as:

learning in which C&IT is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources.

The project aims to understand students' experiences of networked learning. We believe there is a need to understand networked learning from the students' perspectives for three main reasons:

- There has been little good research on the ways in which students actually learn with new technology
- The general literature on student learning in HE makes it clear that learning outcomes are significantly affected by the approach to the learning task adopted by the student. (Entwistle and Ramsden 1983, Marton and Booth 1997)

- The significant examples of system failure in sectors that have introduced IT and have not understood the work done from the perspective of those carrying out the work (Randall et al 1994).

The space of possibilities for networked learning is vast, for this reason the project has identified some priority areas on which attention should be focused. The observations reported here concerns a course that makes use of asynchronous communications technologies to support collaborative learning among geographically and /or temporally distributed group of students.

We report findings from interviews with ten Open University students about their work on the final project of Information Technology and Society (THD 204), a second level course. The project assignment was double weighted and provided an opportunity for students to synthesise the different elements of the course and to experience collaborative work in a computer conferencing environment. A full description of the course can be found in Kear and Heap (1999).

Methodology

The NL in HE project is informed by a phenomenographic approach, which provides a linkage between the various aspects of the overall project. Ference Marton explained phenomenography as a research approach for understanding people's ways of experiencing the world. He defined the approach as:

the empirical study of the differing ways in which people experience, perceive, apprehend, understand, or conceptualize various phenomena in, and aspects of, the world around them (Marton 1994 p4424).

A phenomenographic approach is used in this case to describe the qualitatively different ways that students experience networked learning. The objective is to illuminate the *variations* in ways of experiencing networked learning (Marton & Booth, 1997; Laurillard, 1993). This approach, which focuses particularly on student activity, has informed both theories of teaching and learning (Biggs 1999, Prosser and Trigwell 1999).

The emphasis in the interviews we conducted was in stimulating the students' reflection upon their own experience, this conforms to Marton's view that the phenomenographic interview provokes a change from unreflected to reflected awareness (Marton 1994). In the interview, the aim was to:

make things which are unthematized and implicit into objects of reflection, and hence thematized and explicit (Marton, 1994:4427).

The analysis of the interview data has concentrated on the written transcripts of the interviews taken verbatim from audio recording. The interviews have been examined, using NVivo qualitative research software, for variations in the experiences of the students and to try and identify emergent elements that might be common between them. The analytic process in phenomenographic research is iterative, once categories of description are found they can be reapplied to the data that they originate from. The results reported in this paper are an initial set of categories and they are currently being reapplied to the data and reported back to participants.

Criticisms of Phenomenography

Phenomenographic research has been criticised from an ethnomethodological perspective for its reliance upon the interview (Fleming 1986). Fleming gives an example of 'versions' - that is, of an individual giving a series of accounts of one event to a variety of audiences. Each account is different, each is fitted to its particular purpose and might appear to be out of place in another setting. The point being that all accounts are partial, that they point towards something but cannot contain all the information required for a complete description of that which is being described. A recent critical review of phenomenography offers a 'constructionist' revision of traditional phenomenographic approaches (Richardson 1999). Richardson argues that conceptions of reality are discursive practices, which may be used as resources in particular communicative encounters, rather than psychological entities that reside in the minds of individuals (op.cit. p72). Richardson argues for more attention to be paid to accounts given by participants in real-life situations. As a tutor I was a participant on the course and observed the course interaction. I was able to place in a rich context the interview material and this helped to situate the interview.

Findings

The interviews were conducted with ten students. The local tutor group had been divided previously into four groups by the tutor. This had been done to spread academic standards and the gender of participants. Each group contained five members, four male and one female in each group. The interviewees were selected to give a spread from all four groups. Three groups provided two interviews one group provided four. The initial selection was made from the students nearest the city centre where tutorials had been held. An attempt was made to interview all five students in one group but one student had moved and proved unobtainable. The students were asked to begin by telling the interviewer how they approached the project, TMA 06.

Assessment

The assignment book for the project TMA 06 was a separate booklet some 12 pages in length, which gave detailed instructions on what was expected. The booklet contained sections on the aims of the group project, activity, report structure, mark allocation and advice on establishing group working. The aims were given in six bullet points. These included integration of course issues and two bullet points that mentioned peer group and co-operative work. The mark allocation was as follows:

| | |
|----------------------------------------------------------|--------------------|
| Group element | (total 30%) |
| Report Summary | 10% |
| Themes discussion in conference | 10% |
| Report conclusion | 10% |
| Individual element | (total 70%) |
| General structure and coherence of argument | 30% |
| Use of supporting evidence and course materials | 20% |
| Contribution to group tasks and discussion in conference | 20% |

Students interpreted these aims differently. An example of two contrasting interpretations in one group is illustrated in the following quotations (Interviewer in italics):

What did you conceive that task to be?

I would assume that it was more to continue the computer mediated conferencing as an exercise in itself for people to work together to sort of exchange ideas and irrespective of what the particular project was to work on. (Daniel)

What do you think the emphasis was?

Your personal individual um your personal big 500 words or whatever

So the individual submission was

Was more important than the group work

And how about content and process if we split it that way?

Content

Rather than process...

Rather than process and yet it's, I would argue the process probably took as much time as writing the content if not more (Lillian)

The two students were co-operating in the same group to produce a joint project yet they had different views of the task they had been set. Despite extensive documentary guidance being provided. When prompted to re-read the booklet Daniel who had identified the task as being to conduct group work revised his view and conceded that content may have been more important.

Well does the assessment scheme reflect the view you had ... ?

Um probably thinking about it in that way erm probably not. It's more, unless I'm miss-reading it, it's more the content than how it was achieved so it doesn't cover the process therefore really.

Amongst the interviewed students it was his initial view that was most common. The view expressed by Lillian that emphasised content and individual work was uncommon. Her view was clearly instrumental and she clearly expressed the view that she worked to the assessment guidance:

I'm sorry but I wrote my answers to the marking scheme, absolutely.....

This student was an experienced OU student and she contrasted her practice in this course with those studied previously. Her mark was high for the TMA and consistent with her course average. Her exam mark exceeded her course work average by a full ten points. An unusual relationship in a tutorial group where generally the examination results were similar to, or lower than, the coursework average.

Daniel was less focused on the assessment criteria:

I don't think I actually used the marking scheme to structure my answer, maybe I was wrong

His marks, one grade below Lillian's, were extremely consistent, his course average, exam and TMA 06 mark varied by only 2 points in total.

The other two students interviewed from this group inclined to the view that the TMA was concerned with how the work was done rather than content. Lillian was the group's co-ordinator or 'bully' and the group exhibited a strongly instrumental approach. Whilst this was commented on, by at least one other student, no one complained that their interpretation of the assessment guidance had been ignored or overridden.

Time matters

In order to complete their work in distributed groups the students had to confront problems around the management of time. The different groups all resorted to a variety of synchronous media to get their work completed. The quote below from Martin is representative:

We did have deadlines and a lot of the conversation again was on the private chat in fact I think there was a stage where we actually had a two hour communication which I could see my telephone bill going through the roof, but basically it was essential. I think the thing on the private chat was there was a hell of a lot could be covered, it was like a dialogue rather than the actual communication on the conference it just felt as if we'd never really communicated on the conference it was more or less people working in isolation

Other groups tried to meet face-to-face, but this often failed because other group members were not available. Those groups that used the synchronous chat facility in FirstClass found it useful and reported the experience positively. One group used the ordinary messaging system for synchronous activity, this allowed the system to automatically record the postings, but clogged the conference with large quantities of post. The reasons for needing synchronous communication concerned working to deadlines. Students also reported that having used synchronous media they felt closer to the other students, more emotionally connected:

So why was the chat better than using the ordinary mailing system?

I think the chat was better because it was more on-line, whereas with the messaging it was sort of you put the messages up. Well I don't know because even the messaging one could be on-line but we just seemed to use the chat because it was more conversational really. I think it was just easier to use. You could see who was in the group at that time, you could see who was watching your responses and you could reply to those. (Julie)

The students used a variety of media that were not naturally recorded, synchronous chat had to be cut and pasted into a word processor to be saved. The Assessment booklet included the following guidance:

The most important point to remember is that the group conference should provide a record of all the important discussions, decisions and contributions, since it will be the only permanent record available to your tutor for grading that part of the assignment. Should your group live close enough together to permit face-to-face meetings, then any discussion and decisions made at such meetings should be summarised and recorded in the conference (Assessment Book 2 p8)

During the interviews it became evident that at least two sets of communications had taken place outside the conferences. One concerned a student who had gone off-line for a week at a critical period. The negotiation with the group leader took place by telephone and only a limited report of the outcome entered the conference. In a second group a more substantial portion of the work was off-line and wasn't evident in the conference:

Did you work to deadlines on that,

We did have deadlines and a lot of the conversation again was on the private chat. In fact I think there was a stage where we actually had a two hour communication..... it's unfortunate that it had to take place outside but this was the main reason that we wanted to post, to cut and paste the information in, to say "right we've had these conversations outside but we couldn't communicate within that forum" (Martin)

In at least one other group synchronous chat had been lost during a conversation despite an attempt to save it.

Conclusions

The work reported here complements the analysis of the same course by Kear and Heap (1999). They report the overall success of group work and the project component of the course. It adds to their analysis by pointing to the problem of understanding faced by students when interpreting course documents. Students' interpretations of their common task varied within a single group. Overall the students interviewed tended to conceive of their task as completing group work rather than in terms of the course content. This was not due to any weakness in the course documentation, which gave clear and detailed advice. It points to a general problem with assessment criteria and documents in general. No document however detailed or clear can provide for the interpretation given to it by a reader. The divergence of understanding did not disrupt the work of the group. The student who held the minority view carried out her task as group co-ordinator in a thorough and efficient manner. Nor did the group's divergent interpretation of their task impact on my assessment of their work. I in my turn had to read and make sense of the assessment criteria. It was no more clear to me than the students where the emphasis lay in terms of content and process.

As a tutor I had to judge whether students had worked collaboratively, but the resources I had in some cases did not include significant exchanges.

Kear and Heap commented that:

For group work to be marked fairly, the process of collaboration, as well as the end product, should be assessed..... The conference transcript is an invaluable aid in assessing the collaborative process (Kear and Heap p26)

The work outside the conference shows the limits to the evidence provided by the transcript and supports the findings of an earlier place-based study:

many conferences had a parallel existence in which the public activity of the conference ran alongside private messages either within the conference system itself (using private mail) or outside the conference system using another means of communications. Some of these parallel channels were visible to course tutors often they were only glimpsed fleetingly (Jones and Cawood 1998).

The students used ways of communicating outside the conferencing system despite explicit instructions to report all communication within the system and the constraints placed upon the students by the distance nature of the course. Because student activity takes place outside the conference the conference transcript is an unreliable record of learning activity. The students made selective use the network technology provided, moved outside its framework and used a variety of other means to achieve their objectives.

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