

Using Online Discussion to Support Activities in Face-to-Face Tutorials

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Abstract

Online discussion activities are commonly used to create online communities, foster peer and tutor support, encourage reflection and provide equal opportunities for participation, particularly for fully online students. This paper describes the use of discussion in face-to-face tutorials for an undergraduate Information Delivery module. The rationale for using asynchronous discussion face-to-face is discussed and the paper then describes the evaluation of the module, examines its results, and discusses recommendations for future iterations.

Keywords

Online communication; asynchronous discussion; group learning activities.

1. Introduction

The use of asynchronous online discussion is widely considered to be one of the key features that can add value to online courses. It provides the potential for collaboration, peer learning and social interaction. It also gives students the opportunity to gain multiple perspectives on topics and offers a more equal platform for all students to voice their thoughts and opinions than that of a face-to-face classroom, where some students may feel intimidated speaking out among their peers (e.g. Mason, 1994; McConnell, 2000; Salmon, 2002).

Asynchronous discussion is typically used in online courses that provide little or no face-to-face contact with the tutor or other students. Discussion activities in this mode usually run over several days or weeks, enabling students to reflect upon the contributions of others and

consider their own contributions before making them. This paper, however, describes a more unconventional use of discussion. A case study is presented where discussion boards were used in synchronous face-to-face tutorials to support collaborative group work. This study took place within the School of Computing at Napier University using an Information Delivery module.

Many programmes of study at Napier University provide students with the opportunity of a supervised work placement in their third year of study. Those who elect not to take up this option attend alternative campus-based modules, of which Information Delivery is one, that are intended to provide an equivalent experience. Therefore, collaborative exercises, with an emphasis on decision-making and self-regulation, were designed to expose students to practical problems similar to those that would be faced by their colleagues engaged in teamwork in real organisations. Online discussion boards were used to support these collaborative exercises in face-to-face tutorials.

The central focus of the module is the effective delivery of information in an organisational setting. This was presented to the students in the context of the problems of information overload and incompatibility between organisational systems (known as 'islands of automation'). Students were intentionally exposed to these problems in the course of the online exercises. They were required to find strategies for achieving information-related goals through the definition of team roles, effective use of available tools, and the application of theoretical concepts presented in lectures.

Collaboration is central to helping students construct knowledge about a subject as it provides opportunities to see and hear how other students approach and solve problems, enables a group of students to tackle a problem that would be difficult for a single student alone, and helps students to develop collaborative work skills (Grabinger, Dunlap & Duffield, 1997). Student collaboration was particularly important for the students in this study in order to emulate a realistically complex working environment. However, the class sizes and available facilities made it impossible to run collaborative groups face-to-face, which was the primary reason behind the trial of online discussion in face-to-face classes, although there were seen to be additional benefits.

This paper describes the evaluation that was undertaken of students using the asynchronous discussion boards and a description of the results, examining their attitudes to collaborative group work and the technology used. At the end of this paper these results are discussed, and implications and recommendations considered.

2. Background

The Information Delivery module was designed as a replacement for a more general module on innovation. This module had become difficult to manage because of growing student numbers, and its relevance to some programmes of study had been questioned by a number of students in the feedback collected after previous deliveries. Creating a new module around the concept of business integration was seen as a way to solve the problem of relevance while maintaining a degree of creative thinking.

Information Delivery aims to provide students with an understanding of information use in organisations, the current challenges related to information management and delivery, and an introduction to the corporate portal and how it can be used to address these challenges.

Each week, as well as attending the lecture, students were expected to attend a one-hour tutorial. At the start of these sessions, students were split into groups of approximately 12–15 members and were allocated a private discussion board for each collaborative tutorial task, which could be accessed both during and after the tutorial. The students were asked to use the online discussion as the primary means of communicating with the other members of their group and for sharing information. However, they were not prohibited from face-to-face contact with their group members, as indeed this would be difficult as the group members were working in the same computer laboratory.

The students in this cohort came from a number of different programmes and most did not know each other well, if at all. The one exception is a group of part-time students who had worked together previously and were more familiar with one another.

2.1 Rationale

The initial rationale behind the use of asynchronous discussion in a face-to-face classroom was to enable the students to undergo a collaborative learning experience within the constraints imposed by large class sizes and the impracticalities of running group sessions with such large numbers – there could be up to 160 students on the module with only two members of teaching staff. These impracticalities included problems of room availability, timetabling and the sheer noise created by a large number of people talking simultaneously in the same space.

However, as well as pragmatic considerations, there were a number of other reasons for using discussion in a face-to-face context. An important aspect of the Information Delivery course was for students to engage in a critical appraisal of the technology they were required to use. Ostensibly, the tools available in the University's virtual learning environment should have been sufficient to support the tasks that students were required to perform. In practice, however, many problems arose, both technical and organisational, that encouraged students to consider the interdependence of technical and organisational systems, and the need to take explicit design decisions in the context of both. The ability to relate individual and organisational needs to the provision of appropriate and effective technological support tools is seen as central to any business integration effort.

A vital element of the module was therefore to provide a first-hand opportunity for students with developed technical abilities to experience and observe the shortcomings of technologies in use. For this reason, it was a positive asset that Information Delivery students came from programmes as diverse as Accounting and Information Management and Software Engineering.

The use of online discussion also facilitated another aspect of the module delivery intended to provide students with a first-hand learning experience – in relation to the problem of information overload. Exercises were deliberately constructed so that students were obliged to co-operate in order to produce a product by the end of a timetabled session. Many of the exercises early in module involved the analysis and organisation of information collected from Internet searches and, without co-operation, there would simply be too much information for one individual to process effectively. The exercises were also arranged so that students had to discover this for themselves in the course of trying to manage the large quantities of information available.

An important part of the authentic student learning experience on this module was that of working in distributed teams. This skill is one likely to be used by the students after they graduate in their working lives and it was thought that this would help to provide a more genuine experience for the students. Benefits associated with real-life learning experiences include the of greater relevance to the needs of the students, and the process of reflection of the true nature of the real world, leading to a higher likelihood of transfer of knowledge to new situations (Grabinger et al, 1997).

The student group on the module contained a large proportion of French students as well as other nationalities. For them English was not a first language, and they were often reluctant to speak up in tutorials. It was hoped that using the discussion would enable these students to make a greater contribution to the group by allowing them to communicate in writing, rather than verbally. In addition, tutorials risk being dominated by one or two forceful personalities and it was hoped that such practice could be countered using discussion, even though the students were still physically present in the same room as one another.

In addition to the collaborative exercises, students were asked to complete reflective logs as part of the learning experience. This activity aimed to provide the reflective step in an experiential learning cycle that was maintained throughout the module. (e.g. Atherton, 2002). The discussion would enable them to revisit conversations and reflect upon the learning and group processes, which is a secondary benefit of online discussion (Comeaux & McKenna-Byington, 2003).

An added benefit for the module lecturers was that the use of discussion provided a record of the students' participation. This permitted identification of students who were not participating, who could then be provided with additional support, and acted as a check of the authenticity of the reflective logs.

Group decision-making using asynchronous discussion is notoriously difficult (e.g. Ocker & Yaverbaum, 1999) for a number of reasons including the increased time to make a decision, an increased proneness to conflict, and greater difficulty in reaching consensus (Farnham, Chesley, McGhee & Kawal, 2000). Use of a synchronous chat facility in addition to the discussion could have helped the students with socialisation and decision-making activities (Cox, Carr & Hall, 2004). However, the version of this facility available in the virtual learning environment implemented by the university did not offer the facility for multiple private groups and was not robust enough to be used with many simultaneous users.

3. Evaluation methodology

The effectiveness of the online discussion was evaluated in three ways:

1. Examination of the standard university End of Module questionnaires that cover all aspects of teaching and learning on the module.
2. Examination of the reflective logs that students were required to complete as part of their assessment.
3. Use of evaluation questionnaires designed specifically to look at the use of the online discussion groups that took part in the module.

In addition to these evaluation tools, archived conversations from the discussion forums and observations made by the teaching staff were used as informal anecdotal evidence to

highlight areas of interest and to back up the findings of the more formal data collection methods.

3.1 End of module questionnaire

All modules at Napier University undergo a standard End of Module evaluation, which is administered in the form of a questionnaire. This contains several open-ended questions covering what the students liked best or least about the module, any suggested improvements or changes and any other general comments.

Fifty-one of the students who had returned the module evaluation questionnaires provided qualitative information by responding to these open-ended questions.

3.2 Reflective log

As part of their module assessment, students were asked to complete reflective logs. Each week, they were asked to complete a short document containing a summary of the week's activity, results and a reflective commentary on how these results could be used. As the weeks progress, these logs built up into a portfolio, which formed a key part of the overall assessment of the module.

In their logs, students were asked to critically evaluate the performance of their groups during the practical exercises in relation to observable group processes. They were also asked to reflect on their personal experience of working online, and the appropriateness of the available technological tools – the discussion facility in particular.

3.3 Evaluation questionnaire

As a way of quantitatively supporting the evidence of the other data collection sources, an additional questionnaire was devised specifically to evaluate students' perceptions and experiences of using the discussion boards to facilitate online discussion. The questionnaire was designed to determine attitudes and consisted of a number of statements. Students were asked to define the extent to which they agreed or disagreed with each statement. The questionnaire covered the areas of team working and roles, the collaborative learning experience, prior experience with online learning and asynchronous discussion, and technical issues. Twenty completed questionnaires were received.

It was intended that these questionnaires should be distributed to all students in the year group but it was not possible to do this because of administrative complications. Instead, it was distributed to a single revision class during the final week of taught classes. As the classes were originally randomly selected, this was considered to be a representative sample.

4. Evaluation results

In general, the student evaluation was extremely positive, affirming that most students had found the module worthwhile, though that the online group work was a useful – if sometime frustrating – experience and particularly praising the lecturers for their enthusiasm and commitment.

There were three main findings relating to areas in which students had trouble with the online discussion or in which they felt it could be improved. First, although the students were experienced at group work and found the group learning experience extremely valuable, they expressed a preference for working face-to-face rather than online. Second, the students were comfortable with technology in general but had little experience with online learning or online discussion and therefore found it problematic. Third, the students felt strongly that the particular discussion technology used was unsuitable for the task, in terms of the functionality provided and its ability to facilitate group processes and decision-making.

That the students preferred to work face-to-face rather than online is not altogether surprising. There is evidence that the greater degree to which students know one another the more effectively they will work together online (Tolmie & Boyle, 2000), and that decision-making face-to-face is easier than online (Ocker & Yaverbaum, 1999). Problems with online communication include the minimal amount of social cues and emotions, such as body language and non-verbal communication, which may influence student learning and interaction. Students may also be uncomfortable interacting with other students who they have not met face-to-face beforehand (Vonderwell, 2003). The group of part-time students, who had known each other previously, were the most efficient at organising themselves both face to face and online, which supports these previous findings.

In this study, part of the reason for the use of online communication was to provide an authentic, real-world activity for the students, highlighting the issues of technology constraints and information overload. While face-to-face communication as the only option may have made the task more straightforward, it would also have negated the authenticity and some of the key learning outcomes of the exercise.

In practice, most of the groups found that they struggled with the group communication and called for a face to face meeting early on. Some groups, however, appeared never to meet face to face. The discussion forum seemed to be useful for assigning group roles (which was part of the activity that the students were told to complete) and for collecting and sharing information, but there is less evidence of activities involving group decision-making and socialisation taking place using the discussion forum.

An added, and unexpected, benefit of using the online discussion was that it enabled students who could not physically attend the class to still take part in the tutorial group. Examples of this include a disabled student who found the flexibility of being able to take part from home invaluable, and another student who had to unexpectedly return to France for a time and was able to continue taking part in tutorials.

Although the students were very experienced with computers and technology, very few had experience of learning online or using online discussion for learning and so encountered difficulties in using these tools effectively. Again, this is not altogether surprising. There is evidence that the more experienced a student is at working under the specific conditions of a task the more effective he or she will be at that task (Tolmie & Boyle, 2000). Equally, it is known that students require explicit guidance and support on how to learn online, and how to use discussion, to make the most of it (Salmon 2000; Palloff & Pratt, 2003).

The discussion system used had a number of functional limitations, but most problems were associated with the boards not updating automatically to show new messages and URLs not formatting and linking correctly. However, from viewing the discussion postings themselves,

most groups appeared to overcome these issues fairly early on. A more significant issue was the appropriateness of the tool (i.e. asynchronous discussion) for the task (i.e. group work and decision making). While the discussion did provide many advantages, including the ability to share data and store messages, one of its main advantages – that of encouraging reflection – was lost owing to the synchronous nature of its use. However, despite the theoretical benefits of alternative or supplementary collaboration and communication tools, at the time this module was run the choice was limited to the tools available in the Virtual Learning Environment used across the university.

5. Discussion and recommendations

In general, the positive findings support the proposition that asynchronous discussion can be used as an alternative method of communication in face-to-face tutorials. However, there are a number of factors that can increase the effectiveness of this medium.

The fact that students preferred to work face to face rather than online was not a surprising finding of this study. In fact, experience of the difficulty in working online and critical evaluation of that difficulty was one of the key learning points for the students. However, an assumption was made that because students were computer literate – most were in the third year of some form of Information Technology degree – that they would intuitively know how to use learning technology to its best potential and be able to learn online effectively.

Another finding of the evaluation was that there were problems with the technology used, particularly with its functionality and appropriateness. The discussion boards did not automatically update, leaving students isolated and wondering if they were being heard, the virtual learning environment did not enable synchronous chat, and collaborative working practices were not easily facilitated. As a result, students were focusing on the organisational problems caused by the limited technology rather than those caused by group processes or information systems.

To counter these problems a number of recommendations for future iterations of the module have been highlighted.

- The use of induction activities, introducing students to the technology and ways of learning online and the workings of online groups, would enable students to learn more effectively when undertaking the group tasks.
- Socialisation and teambuilding activities, such as icebreakers or use of student homepages could help to get the groups to get to know one another and facilitate easier group formation, role allocation and decision making.
- Investigation into alternative technologies that could better support the online group working and learning processes. This could include more sophisticated and robust discussion and chat technology, the use of collaborative tools such as wikis, and the ability to create and share the learning log online using blogs.
- Explicit guidance for students as to why they are using the technology in the way they are using it.

It is planned to implement these recommendations as much as possible for the next iteration of the module, and to carry out further evaluations.

The findings in this paper also have wider implications for the selection and use of online learning tools. One of the main points raised during the Information Delivery module is that the selection of computer based tools should be client-centred in the sense that they should be chosen according to identified needs. It is interesting that so many students on this module had difficulties with the technology because of the low level of functionality it provided as well as its usability issues. This serves to highlight the need for educational institutions to be circumspect in their adoption of learning technologies, and not to cut corners on needs analysis exercises.

The current findings also suggest that induction and socialisation activities need to be built into an institution's e-learning strategy in order to promote effective learning. In the Information Delivery module, a significant element of the content was related to the need for complementary technical and organisational systems. This paper demonstrates that even in such a context, it was all too easy to overlook some of the organisational aspects of facilitating online learning.

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