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CASE STUDIES OF SOCIAL NETWORKING FOR ONLINE LEARNING

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1   Introduction

Many different approaches can be taken to the application of technology for learning. One approach is to identify an educational need and then to design a technological solution. An alternative is to consider how an available technology might be used for learning. This paper is primarily concerned with the latter approach, where an existing technology is adopted or adapted for educational purposes.

In particular, the focus of the paper is on the use of social technologies for learning. These technologies (for example discussion forums, wikis and social networking sites) are designed for general communication purposes, but have been taken up with enthusiasm by educators. The paper presents and discusses three case studies of the use of social technologies for learning: (1) wikis and forums to support a group project; (2) a photo-sharing application for peer learning; (3) a social bookmarking tool to develop a learning community.

The paper contextualizes these case studies within theoretical perspectives on technology, its development and its use. These theoretical perspectives are largely from the field of social studies of technology – an area which is beginning to be applied to educational technology [1, 2]. Section 2 of the paper provides a brief overview of the theoretical perspectives. Section 3 presents the three case studies. Section 4 draws out some common themes from them, which are linked back to the theoretical ideas presented earlier. Section 5 concludes the paper.

2   Theories of technology

Consider the following two quotations about technology:

"When every child has a connected laptop, they have in their hands the key to full development and participation." [3]

"While the politicians struggle with the baggage of history, a new generation is emerging from the digital landscape free of many of the old prejudices. These kids are released from the limitation of geographic proximity as the sole basis of friendship, collaboration, play and neighbourhood. Digital technology can be a natural force drawing people into greater world harmony." [4]

In both quotations, technology is presented as a 'virtually autonomous agent of change' [5]. What is more, it is presented as a benign force for improvement.

This 'technological determinist' view sees technology as developing according to its own inner logic, independently of socio-cultural factors. This perspective is now largely out of favour with sociologists of technology, although it thrives in journalism and in popular discussions of technology. It is also apparent in educational circles, where new technologies are often eagerly adopted and promoted. What has supplanted the technological determinist view in scholarly circles is a variety of sociological approaches which can loosely be classified as 'social construction of technology.' For a good account of this development see [6].

These newer, sociologically oriented approaches draw heavily on ethnographies or case studies of technological developments, such as the telephone, the bicycle, the fluorescent light, and so on. This emphasis on ethnographic or historical research is the basis the social study of technology's claim to be empirical, rather than abstract. Two useful analytical concepts which emerge from this sociological work are 'interpretative flexibility', in which 'different social groups associate different meanings with artefacts'; and 'relevant social groups', who are defined as 'those groups who share a meaning in an artefact' [7].

The historian David Edgerton has observed that even among sociologists of technology, the story of technology is often conflated with the story of innovation [8]. That is, discussions of technology,

whatever the scholarly background, tend to concentrate on technology in its development phase, as it is worked on or debated by engineers, managers, marketing departments, and so on. For Edgerton, what counts as technology, though, is not necessarily innovative, and indeed in a recent book he gives many examples of 'old' technology (such as steam and coal power) continuing in widespread use long after the introduction of newer technologies that were claimed to have superseded the earlier ones [9]. For Edgerton, the story of technology is as much a story of use as it is of invention; and the important technologies in a culture are not necessarily the newest.

The neglect of studies of 'technology in use' by sociologists of technology is ironic, as often the way technology is used, long after it was innovated, shows social processes at work. For example, technology often is not used in the way its designers intended, or it is adapted to meet local requirements. Studies of technology in use, for example case studies, are useful for revealing how users can mould technologies towards their own needs and purposes. Case studies also reveal aspects of the technologies which are not apparent until the technologies are put into practice in a particular context. The following case studies are intended to show the plausibility of this observation within an educational context.

3   Case studies of social technologies in education

In this section three case studies are presented where generic social technologies have been used to support online collaborative learning. Two of the case studies are examples of distance learning modules from the authors' institution – the UK Open University (UKOU). These involve large numbers of students (more than 500 per module presentation). The third case study is from Dubai Men's College, in the United Arab Emirates (UAE), and is typical of a smaller scale face-to-face learning setting. All three case studies are described more fully, together with other case studies of social technologies, in [10].

In the first UKOU case study the software tools used – wikis and forums – are within the University's Moodle-based Virtual Learning Environment. In the second UKOU case study a photo-sharing environment was created in-house, based on the public photo-sharing environment *Flickr*. In the UAE case study, a software tool was used which is freely available on the web – the social bookmarking facility *Diigo*.

3.1   Wikis and forums for group projects

The UKOU module *Information and Communication Technologies* included a group project which students carried out over a period of 7 weeks [10, pp.162–165]. The purpose of the project was twofold: (1) to enable students to learn through discussion and collaboration (2) to support the development of skills in team work, particularly online team work. The project required students to work in groups of between 4 and 8 to develop a small website on a particular theme (the concept of the 'cyborg'). A simple HTML template was provided which enabled each group member to work on a sub-topic of this theme, and then to join their work together with that of other group members. The group work was facilitated via an online discussion forum for each group.

An important aspect of the group project was a peer review activity where each student gave feedback on the draft contributions of two fellow students from their group. Students used the feedback they received to improve their contribution before joining it with others' to be submitted for assessment. The group project was marked by the students' tutor, using a marking guide which combined grades for individual and group elements. The marking guide was designed to assess the process of the collaboration, as well as the product. This was achieved primarily by the tutor reviewing students' discussions in the group's forum. Students were also required to submit a short reflective account giving their perspective on the group work experience.

Discussion forums, together with the HTML template, were found to be reasonably effective tools for group work carried out at a distance. However, an opportunity arose to try the use of a wiki, which was provided as part of the university's new Virtual Learning Environment. It was felt that a wiki would provide a good environment for students to develop and share their contributions, and to provide peer feedback. Tutors were therefore invited to offer the wiki to their students as an alternative to the HTML template, and the majority of the tutors did so. Students in these tutors' groups could choose the wiki option or the HMTL template. In both cases they still had the group forum available.

Once the group project with the wiki option was completed, an online survey was used to elicit feedback from students on their experiences. The survey asked students a number of questions about whether they used the wiki, and if so how they had used it and how effective it was. Of the 167 students who were invited to complete the survey, 74 students did so, giving a response rate of 44%. It was found that most of the students chose to use the wiki. This was because they were interested in trying a new

technology and because they thought that it might make online collaboration easier. The benefits students reported included having a shared, visible space where they could develop their material and see how other group members were progressing in developing their own contributions.

Most students reported that their groups used the wiki for developing and pooling their contributions, but used the forum for discussion and decision-making. Some groups also made use of other tools, such as instant messaging. Student were positive about the wiki, and found it reasonably easy to use (although there were some technical issues with images). Students also reported that they agreed strategies within their groups for how they used the wiki. A specific example was in coming to an agreement about whether they would edit each other's contributions, and if so in what ways. However, in practice students turned out to be reluctant to edit each other's contributions. This kind of collective writing and editing is one of the tasks a wiki is designed to facilitate, so it is natural to wonder why, in this narrow sense, the technology failed to fulfil one of its intended purposes. This is a point we shall refer to in Section 4.

3.2 Collaborative learning via photo sharing

When a short module on Digital Photography was in the planning stages, an identified aim of the module was to help students develop their photography skills through peer learning [11; 10 pp.105–108]. It was suggested that the module should be based around a photo-sharing environment similar to the public website *Flickr*. One possibility was to use *Flickr* itself, but this raised difficulties because the *Flickr* environment was outside the control of the university. Therefore it was decided to develop an in-house social networking environment for photo sharing.

The resulting software tool, titled *OpenStudio*, enabled students to upload photos and to comment on the photos of fellow students. Because the module attracted large numbers of students (typically over 1000), *OpenStudio* automatically divided students into small groups which changed weekly. In this respect, *Open Studio* enabled easier and more effective management of student groups than *Flickr* would have permitted.

Students were encouraged to upload photos each week and to provide comments and critiques of the photos uploaded by the students in their group for that week. These activities were a key element of the module, and most students took part. Students could also comment on photos from students outside their group if they wished, or could provide comments for their own photos, as a means of reflective learning. A search facility allowed students to find particular photos or particular contributors. A 'favourites' tool enabled students to flag photos that they found of particular interest and keep them in a 'virtual album'.

Evaluation of the module showed that students found the *OpenStudio* environment helpful, mainly because of the comments they received from their fellow learners, and the sense of community that developed as a result. One student commented:

"[…] I really appreciated the comments I got. I also found that evaluating others' work made me think about the various aspects that make a good photo, again helping me to improve." (cited in [10 p. 106])

However, some students pointed out problems with the use of *OpenStudio* in the module. They felt that the quality of feedback from other students was lacking at times. Some students made it very clear that they wanted more input from instructors, who were experts in photography. Learning through peer feedback, which the software tool was designed to facilitate, thus proved somewhat problematic. In subsequent presentations of the module, students were provided with earlier guidance on how to provide constructive and in-depth feedback on each other's photos.

Following on from each module presentation (which lasts 2–3 months) many students move on to use *Flickr*, and to create *Flickr* groups associated with the module. This enables them to continue experiencing the sense of community and feedback, and to keep in touch with people they have 'met' online via *OpenStudio*.

The model for the *OpenStudio* software has been used as the basis for the development and use of other in-house environments to enable students to upload media resources, share them and discuss them. This approach has already been used in a new module on Design. It is also to be used in a Computing module, where students will create short videos and provide peer feedback on them.

3.3   Social bookmarking for learning

Dubai Men's College, in the United Arab Emirates, offers vocational higher education, including a Bachelor of Applied Science in Business. In a module on Monetary Theory, which formed part of this degree, the teacher decided to use a public social bookmarking facility with a class of 19 students [12; 10 p. 95–98]. A social bookmarking facility allows users to bookmark web resources and to share these bookmarks (and hence the resources) with other web users. The *Delicious* facility (www.delicious.com) is a well known example. Several different social bookmarking tools were considered as possibilities for the module. *Diigo* (www.diigo.com) was chosen because it has facilities to set up separate groups of users (useful for different classes), it allows users to annotate resources, and it can host discussions based on individual resources.

The students' prior experience of learning was mainly based on a didactic model, where the teacher was seen as the source of knowledge, which was then 'transmitted' to the students. Moreover, the religious and secular culture placed a strong focus on memorization and rote learning. In contrast, the trial of social bookmarking in the module was based on the idea of a more egalitarian learning community, with students locating and sharing web-based resources. Students could then discuss these resources with each other and with the teacher. This blurring of the roles of teacher and learner was a significant change of philosophy and pedagogy for this cultural context.

In the module's trial of *Diigo*, 16 of the 19 students registered with the software, and 10 students participated actively in resource-sharing and discussion. Among the active students there were good example of students directing each other to useful resources, sharing insights and supporting each other. Even though marks were attached to the online activities with *Diigo* (10% of the module's grade), some students did not engage with these activities. The students who did not participate included a number who were strongly against the approach. Their view was that it was solely the teacher's responsibility to provide all the learning resources and to answer students' questions. The potential of the software as a facility for mutual educational support was therefore not fully realised, at least for these students.

An evaluation of the *Diigo* trial was carried out via an online survey of the module students, with 10 of the 19 students (53%) completing the survey. Of the 10 respondents, 8 had used *Diigo* in the module, and they reported that it had been enjoyable and helpful for their learning. Two of these 8 students also commented that the software was rather difficult to use at first. Perceived complexity was a reason given by the remaining two respondents for their lack of participation, although it was not the only reason.

Given the prior educational experience of the students, most responded positively to the opportunity for collaborative learning online. However it is clear that there can be resistance to a change in educational approach. So there is a need to discuss ideas of learning with students beforehand, as well as preparing them to use the technological tools.

4   Discussion

The three case studies discussed here were, on the whole, successful. Survey results were generally favourable, and the institutions concerned have continued to use these resources. In pointing out some of the issues there have been, we do not in any way wish to suggest that these social technologies were unsuccessful for learning. What seems to us especially interesting, though, is that these tools were not necessarily used in the ways expected. We suggest that these unexpected usages reveal shortcomings in some customary ways of thinking about educational technology.

Educational tools are often discussed in terms of their 'affordances' [13]. Affordances are those features of a resource, or of the environment, that enable particular usage. It is tempting to equate affordances with the facilities 'designed into' an artefact. From this point of view, affordances are an embodiment of intentions, usually on the part of a designer or teacher. The intentions relate to the way the artefact is to be used. However, we should like to propose a different view.

Social studies of technology show that technology is only partly a matter of design. The meaning of a technology is shaped to a degree by its 'relevant users', as mentioned in Section 2 of this paper. We should like to suggest something similar with the affordances of a technology in relation to learning. The true affordances of software tools only become apparent once the tools are used by teachers and learners. Although educators and researchers can gauge the possible educational value and (less frequently) the possible problems of new software tools, the actual benefits and problems are only discovered when the tools are used in various contexts by learners and teachers.

For example, in the wiki case study, a principal affordance from a designer's point of view was the ease of collaborative editing and writing. But this feature ceases to be an affordance if students do not

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think it is their role to modify each other's work. In the case study of the photo-sharing site *OpenStudio*, a similar process is seen. The tool enables peer feedback; but some students' comments, although providing encouragement, did not suggest ways of improving. What had seemed to be an affordance to the educators and software designers, was not so to these students. Finally, we saw in the case study of *Diigo* a culturally related reluctance among some students to act as teachers. The affordance of social bookmarking for constructivist learning had no relevance to these particular students.

5   Conclusion

In conclusion, generalising from these observations, we suggest that the effectiveness of any technology cannot be predicted from the technology itself, because it depends on other factors related to the social context of use. The use of social technologies in education has differing outcomes depending on the educational context, the teachers and the learners. One of the many values of case studies in discussing educational tools is that they show some of the ways in which contextual factors count for more than purely technological ones.

Literature

[1]   A. Jones and C. Bissell. The social construction of educational technology through the use of authentic software tools. *Research in Learning Technology*. Forthcoming, 2011, 19: 3.

[2]   S. Walker and L. Creanor. The STIN in the tale: a socio-technical interaction perspective on networked learning. *Educational Technology and Society*. 2009, 12: 4, 305–316.

[3]   Anon. One Laptop per Child Website, http://one.laptop.org/about/education. No date. (accessed 29 June 2011).

[4]   N. Negroponte. *Being Digital*. London: Hodder and Stoughton. 1995, 230.

[5]   M. R. Smith and L. Marx. *Does technology drive history?* Cambridge, MA: MIT Press. 1995, xi.

[6]   P. Brey. (1997). Social Constructivism for Philosophers of Technology: A Shopper's Guide. *Techné*: *Journal of the Society for Philosophy and Technology,* 2:3-4, 56-78.

[7]   R. Kline and T. Pinch. Users as agents of technological change: the social construction of the automobile in the rural United States. *Technology and culture*. 1996, 37: 4, 763–95. Extract from pages 765–7 reprinted in D. MacKenzie and J. Wajcman (eds.). *Social shaping of technology* (second edition). Milton Keynes: Open University Press. 1999, 113–15

[8]   D. Edgerton. Innovation, technology, or history: What is the historiography of technology about?. *Technology and Culture*. July 2010, 51: 3, 680-97.

[9]   D. Edgerton. *The shock of the old: technology and global history since 1900*. London: Profile. 2006, xiv-xviii.

[10]   K. Kear. *Online and Social Networking Communities: a Best Practice Guide for Educators*. New York: Routledge. 2011.

[11]   S. Minocha. A study of the effective use of social software to support student learning and engagement. JISC, University of Bristol. 2009, 55-58. [Available from http://oro.open.ac.uk/16141/3/Effective-use-of-Social-Software-in-Education-CaseStudies.pdf, accessed 20 Oct 2011]

[12]   M. Curcher. Sharing with the Shabab: A study of the implementation of social bookmarking in the delivery of an economics course for students who are learning in a second language. 2009. In T. Bastiaens *et al*. (eds.). *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*. 2009, 1197-1202. Chesapeake, VA: AACE.

[13]   G. Conole and M. Dyke. What are the affordances of information and communication technologies? *ALT-J, Research in Learning Technology*. June 2004, 12: 2, 113-124.