

The Pleasures And Perils Of Social Software

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ABSTRACT

This paper describes some theoretical underpinnings for the use of social software (such as wikis, blogs, tagged link sharing) in e-learning, in particular extending earlier models of interaction, and highlighting the emergent nature of the group as a distinct entity. It goes on to describe some of the uses of social software in undergraduate and postgraduate teaching, examining the consequent benefits and dangers.

Keywords

Social software, wiki, blog, tagging, folksonomy, self-organisation.

1. INTRODUCTION

Blogs, wikis, link sharing systems, and other forms of social software have become popular, not just as one of the key underpinnings of what has become known as 'Web 2.0' but also as educational tools. However, most educational use of such software has been taken up in a piecemeal fashion, with little consideration of how it differs from earlier systems. This paper begins with a brief theoretical justification for the use of social software to support a learning community. The remainder of the paper is divided into two main sections, looking first at the benefits that social software can bring in higher education (HE), then its potential pitfalls and some ways that they can be avoided.

2. EDUCATIONAL BENEFITS OF SOCIAL SOFTWARE

Until recently, models of e-learning have considered only the learner, the teacher and the content as actors in the system. This leads Anderson, for example, to identify six modes of potential interaction in online learning – teacher-student,

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teacher-content, teacher-teacher, student-student, student-content and content-content [1].

Clay Shirky has described social software as that in which the group is a first class object within the system [2]. In other words, a group or groups can be identified as a distinct and emergent feature of all social software systems [3], with a range of features and propensities that are qualitatively different from the individuals of which the group is composed. Rather than being formed by intentional design or imposed from above, such groups are formed through small, local interactions between agents which, together, generate structure. This adds further layers of complexity to the task of describing e-learning systems, adding group-group, student-group, teacher-group and group-content interactions to Anderson's original list [4].

As well as changing the way that we may view potential forms of e-learning, the emergent nature of the group provides a different dynamic that changes levels of autonomy and control when compared with the traditional teacher- or learner-centric dichotomies. Each participant is a member of the group and thus contributes towards its form. However, the group itself is an active participant, which influences and guides the individual member, hence acquiring some of the characteristics of a teacher or of other learners in the learning process.

This recursive dynamic places the learner in a curious position: at once guiding but also guided by the environment. When learning, sometimes we need to be in control, while at others we need to delegate that control to others. More than ever before, social software enables the learner to choose whether to control or to be controlled in the choices that determine his or her learning trajectory.

3. SOME USES OF SOCIAL SOFTWARE

There is a vast range of social software available from the mainstream blogs and wikis, to social gathering places such as MySpace¹, to link-sharing folksonomic tagging systems like del.icio.us² to educationally-oriented exotica such as Comtella [5],

¹ <http://www.myspace.com>

² <http://del.icio.us>

Dwellings [6] and the Knowledge Sea II [7]. Increasingly commonplace are mashups, which link more than one form of social software to create something new – indeed, sites such as Ning³ are dedicated to that purpose, making it easy for even programming novices to create sophisticated social software systems. In this paper it is only possible to look at a small but common subset of these, which should be sufficient to identify the common strengths and weaknesses of such systems.

3.1 Blogs

Blogs are currently among the most popular forms of social software in education. This is, at least partly, because of their perceived superiority to traditional discussion forums in their ability to support document-centric discussion, along with a sense of ownership that provides motivation and fun for students [8-11].

“I love blogging cos it gives me the liberty to express myself and this makes me feel good. It is like an outpour of bottled feelings and anxiety.” (student comment).

Blogs are an effective way to encourage learners to reflect, to inspire each other, and to link their learning with the outside world.

Blogs provide a visible record of progress, not only to fellow students but also to the teacher. They are extremely teacher-friendly, as it is possible to keep a track of student activity using nothing more than an RSS aggregator. Because this can be a standalone application, built into an email client, integrated with a web browser, or even fed to the desktop or a screensaver it makes monitoring trivially easy. It also helps to provide a safeguard against plagiarism by capturing the continuing process of learning, rather than relying on finished articles. This can be taken further: on one such course run by the author, the reflective blog is the only assessed element, while on others it plays a smaller but still important role. To some extent this sort of use is contrary to the self-organised, freer elements of blogging, and it is important, when using blogs this way, to allow students freedom of expression, and to reward diversity and creativity.

Tags, trackbacks and blogrolls allow blogs to be linked in a self-organising way, from the bottom up, generating clusters connecting those with related interests. If they are public, students can not only connect with a broader community, but also become a part of it, contributors to its emergent structure. In such an environment, the teacher is more like a gardener than a designer, laying out the borders, pruning the occasional weed and harvesting the results, but no longer designing every element of the learning transaction.

3.2 Wikis

Wikis are valuable not only as a repository and communication medium for group work, but also as a flexible means of doing many of the things that were previously exclusively controlled by the teacher. For example, the author provides slides and lecture notes in wiki form, so that they can be updated during face to face lectures and students can comment, amend errors, ask for clarification and so on at leisure, increasing channels for communication and giving a real sense of power and ownership of the learning process. Providing learning activities that include researching and updating topics on Wikipedia is both motivating and empowering. Wikis, especially when implemented within a walled garden that requires authentication, can also simplify traditionally time-consuming tasks such as allocating students to groups, or signing up for topics of assessed work.

There are some surprising fringe benefits, which highlight the strengths of the ground-up organisation of the medium: for example, MSc students who have grown accustomed to the use of the wiki through its use in the classroom have developed their own pages, which they use to exchange information, swap programming hints and so on. Fed up with inaccuracies in the official timetable, they have developed their own version, updated with the latest information each week. Interestingly, some of the most heavily used and modified pages are those where students rant about problems with the course and its teachers. In this way, they help teachers to learn too, taking further control of their own learning.

3.3 Link sharing

Social link sharing systems provide students with an easy means of sharing knowledge, targeted searching, a mechanism for informal formative feedback and much more.

Using a combination of tagging and tagged ratings using pedagogical metadata known as qualities, one of the more educationally focused of these is CoFIND [12]. As a mechanism for providing anonymous peer-reviewed feedback, CoFIND is useful for learners, who get helpful feedback on their work, sometimes while it is in progress. It is great for teachers too, not only in helping to corroborate marks, but, through its emergent folksonomies, to discover the needs and interests of learners. This is true too when it is used to allow learners to share useful websites that they have discovered with others – the use of qualities gives a clear indication of what learners are seeking in a learning resource, helping the tutor to customise teaching more effectively.

Another benefit of link-sharing systems is that the collected resources are reusable from one year to the next [13], growing into a knowledge base that

³ <http://www.ning.com>

can continue to help students even after they have left the institution [14]. This helps to blur the boundaries between formal and lifelong learning, as well as allowing former cohorts to contribute materially to helping the new intake. Such a system also helps to increase feelings of group bonding and shared purpose.

4. ISSUES OF CONTROL

The ability to take control or to allow the environment to control the course of an educational transaction is a potentially great strength of social software, but it relies on several important factors. Most importantly, the learner must trust the environment to provide suitable content to suit his or her needs. Trust may be broken in many ways, some of which are peculiar to social software.

4.1 The mighty jungle

One of the greatest potential benefits of social software is the potential to extend the classroom walls to reach out to more than a billion Internet users, but this comes at a cost. Popular social software sites such as MySpace, del.icio.us, Wikipedia, Blogger or Flickr are subject to the whims and commercial pressures of the companies that host them. Their vast communities of users are not all friendly, reliable or honest. One of the more surprising events in one of the author's own classes, using Odigo, a system combining real-time chat with social navigation features, was when a student received a proposal of marriage from someone she had just met using the system.

Outside of the protection of the traditional academic environment, learners may be less heedful of the educational purposes of their activities. While Internet field trips into the jungles and wildernesses of large social software sites can be beneficial, the dangers and lack of control that can be exercised are scary. It is, perhaps, more common for teachers wishing to use social software in HE to make use of locally hosted systems, using software such as Elgg⁴, or Blackboard Building Blocks such as Teams LX⁵. These provide more of a walled garden, hidden safely behind institutional firewalls and learning management systems, allowing us to limit access to authorized users, and to identify each individual's contributions. For some uses, such as wikis, this can act as a disincentive to contribute:

"I will not risk getting it wrong, so I will not commit until I know I've got it right" (student comment on posting to a wiki).

Even within traditional discussion boards this is a perennial problem. Where people are anonymous, it

is often possible to circumvent this difficulty, but when we pull back inside the walled garden the fear returns. There is a tension between the control of the institution and the emergent dynamic of the software.

The clash between the self-organising dynamic of social software and the traditional, teacher-led power structures of a university can lead to unsatisfactory results. Anderson, for example, talks of the need to demand certain numbers of contributions to Furl (a link-sharing site), the lack of take-up of blogs that are associated with the institution rather than the individual, and the need to force uptake by disabling other channels of communication [13]. It is inevitable that the emergent behaviour of the group will sometimes clash with the control that a teacher attempts to exercise.

The answer is not to attempt to exert more control, but to step back and let go, gently guiding rather than attempting to fight the tide. With effective task setting, clear pedagogic goals, and feedback, often through alternative and more direct channels such as discussion forums or email, the teacher can shape activities at a higher level while trusting the natural self-organising processes to take care of the lower. This role is not unlike that of the landscape in determining its flora and fauna, or the shape of streets in determining the possible forms of buildings on them: the large and/or slow moving elements of a system (any system) control the faster moving, smaller elements [15].

4.2 The blind leading the blind

In most forms of e-learning, the teacher and the learners occupy a flatter hierarchical space than in conventional face-to-face teaching. The teacher in a social software environment often blends still further into the background. This can lead to uncertainty on the part of the learner – uncertainty of the reliability or trustworthiness of the information and structure provided, and uncertainty about how to interact with the system.

The reliability of information in wikis is an area of hot contention. In a recent talk given by the author, some of the audience of teachers boomed when Wikipedia was mentioned, despite evidence that it is, on the whole, a surprisingly reliable source of information, rivaling and in some ways (such as responsiveness to topical events) even surpassing the Encyclopaedia Britannica [16]. Wikipedia achieves its reliability through force of numbers, a succession of eyes that constantly scan for and fix irregularities in the information. However, when a wiki is used by a class of students, not only are there generally insufficient numbers to make this possible, there is a high probability that those who do contribute are not experts.

⁴ <http://elgg.net>

⁵ <http://www.learningobjects.com/products/campus-pack.html>

"I'm not sure of what to put on the wiki and where, I find it too fuzzy" (student comment).

As a rule (and perhaps by definition) learners are not in a position to provide authoritative information to other learners. This is not only a problem for those seeking information, but also for those who might provide it. When required to contribute to a wiki, a blog, or even to recommend resources or media, the learner can feel vulnerable, reinforcing feelings of insecurity and ignorance.

Even when the teacher maintains significant control, the self-organising characteristics of social software can lead to unexpected behaviour or even work against the teacher's own structure. For instance, in one of the author's own systems, links provided to lecture notes competed and lost against links to external sites entered by students, not all of which (at least from the perspective of the tutor) provided reliable or digestible information.

4.3 Susceptibility to intentional attack

At the time of writing, a search on Google for 'liar' will provide Tony Blair's biography at the top of the list of results, while a search for 'miserable failure' will do the same for that of George Bush. Both are the result of a concerted effort by many people to exploit an inevitable weakness in social software. Google's PageRank algorithm bases the order of returned search results on links from other pages [17], a form of latent human annotation [18].

Where social software exists outside the walled garden of a learning management system (LMS), the outside world can intrude and, on occasions, totally disrupt a learning activity. For example, on one of the author's courses, students writing reflective learning diaries were at first pleased when people from around the world added comments to their blogs. As they became more popular, however, they attracted the attention of the spambots, which soon overpowered legitimate comments and trackbacks with advertisements for gambling and pornography. From being a part of a rich, academic culture, the students found their community to be overwhelmingly dominated by ugliness. Technical solutions such as Turing filters and enforced registrations were only partially successful in stemming the flow. Eventually, the only effective solution was to retreat behind the LMS, losing the rich benefits of being part of a worldwide group.

Even within a walled garden, social software can be vulnerable. Those who know the algorithms can manipulate them to their own advantage, for example by boosting their own sites' popularity in a link sharing system or exploiting social navigation to dominate a discussion [5, 12].

4.4 Emergent stupidity

The self-organising processes that underpin most social software are independent of the intelligence

of the agents which bring them about. Systems that employ social navigation, including Google, CoFIND, del.icio.us and many others are driven by the same process of stigmatism that leads to termite mounds, ant trails and money markets [19]. Many small, largely independent decisions combine to influence later independent decisions. A structure arises from the dynamics of the interactions, not the intentional control of individuals or groups. There is little a priori reason to suppose that the structure may be pedagogically sound or useful.

Worse, many social technologies are susceptible to the Matthew Principle, whereby the rich get richer while the poor get poorer (a familiar enough principle to anyone making use of citation indexes). This occurs when people are aware of the choices that others have made: Surowiecki observes that when each person's choice is made in ignorance of the choices of others, the aggregate reliability of their choices is often far greater than that of any individual [20]. It is important, therefore, to use systems that allow a balance of private and public information when making decisions that will affect the overall structure.

Some systems, such as the Knowledge Sea II, CoFIND, Comtella and Elgg, attempt to play an active role in enabling the structures that develop through social software to take a more focused pedagogical form, and to give some of the scaffolding and support that a teacher might traditionally provide. The growing ease with which it is possible to create mashups, using standards such as RSS and RDF combined with web services and APIs to social software sites, means that such educationally focused systems can (and should) become more commonplace.

4.5 Matching expectations

Systems that use tagging and/or collaborative filtering are constantly reshaping and restructuring their folksonomies, emphasizing the popular and well-rated, relegating the less popular tags and resources to the backwaters of the site. Especially in larger sites, it is not always easy to recognize the algorithms that are being used – indeed, a whole industry has sprung up around identifying and exploiting Google's algorithms.

It is important that the principles behind the structure generated through social processes is well understood by the user, so that strengths and weaknesses can be accurately assessed. Wikipedia is often very good, but it is sometimes very bad, so students need to recognize how problems arise. Similarly, the learner's own level of control should be clear. Students often express frustration when their words are deleted or modified by others using a wiki, or puzzlement as to why URLs that they have added to social linking systems have not been popular or successful.

5. CONCLUSIONS

Social software offers many benefits in HE teaching, but can leave students feeling adrift or uncertain, is susceptible to intentional attack, and its self-organising characteristics can lead to untrustworthy structures and content without pedagogic value. If teachers recognise the self-organising dynamics of social software, better use can be made of it. This may mean exercising control through high level goal-setting and low-level feedback, or through building new social software or mashups that take appropriate shapes by design.

Structure influences behaviour, and the large and slow moving elements of that structure influence the small more than vice versa. However, as in natural systems, the combinatorial effects of the small will, over time, eventually change the large. As learners take more control, or the emergent group begins to move in directions that no one had anticipated, the teacher will be forced to change and adapt. The innocent decision to use social software in our teaching may one day change the nature of the role of the teacher itself.

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