

# Communication dynamics: Discussion boards, weblogs and the development of communities of inquiry in online learning environments

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Online learning environments (OLEs) are now critical to teaching and learning across Australian higher education. Their influence impacts on the availability of content, the design of courses and, perhaps most pedagogically significantly, the nature of communication. The discussion board is the ubiquitous communication tool within these OLEs and hence significantly shapes the kind of communication that takes place. In light of this, the degree to which a successful community of inquiry can be facilitated through the use of discussion boards is examined and compared to the possibilities afforded by weblogs in the same role. Weblogs, it is argued, offer new opportunities in the development of social, cognitive and teacher presence online and should be considered in the development of or alongside established OLEs.

**Keywords:** online, online learning environments, weblogs, community, social constructivism, discussion boards

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## Introduction and background: Towards social constructivism and community in online teaching and learning

I believe that all education proceeds by the participation of the individual in the social consciousness of the race... I believe that the only true education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself. (Dewey 1897, p. 77)

...only through communication can human life hold meaning. The teacher's thinking is authenticated only by the authenticity of the students' thinking. The teacher cannot think for her students, nor can she impose her thought on them. Authentic thinking, thinking that is concerned about reality, does not take place in ivory tower isolation, but only in communication. (Freire 1970)

Both Dewey and Freire recognised and frequently highlighted in their work the critical importance of the social experience in education and the crippling effects of transmissive pedagogies and the systems that support them. Dewey (1938) argued that education that offers a pre-organised body of knowledge for transmission bred docility, receptivity, and obedience while Freire (1970) called for an end to the "banking" model of education which he saw as a process resulting in people being "filed away through the lack of creativity, transformation, and knowledge". While their perspectives and contexts varied significantly, Dewey looking for enlightenment in Victorian England and Freire striving for freedom from the "ideology of oppression" in 1970s Brazil, these objections and their proposed solutions of social participation, through communication, have influenced generations of theorists and practitioners.

Primary among these theorist have been those who ascribe to a social constructivist perspective, defined by Prawat and Floden as "distinctive in their insistence that knowledge creation is a shared rather than an individual experience," where "knowledge evolves through a process of negotiation within discourse communities" (1994 p 48). Particular to these, Stacey (1999) observed a number of researchers and writers concerned with teaching and learning online who have "described the potential of the medium as an interactive environment that would enable collaborative group learning and would change the nature of distance education from an autonomous, isolated experience to a potentially social constructivist environment". In addition to this, Brook and Oliver (2003) identified several authors who have pointed to the importance of the social phenomenon of community on online learning.

Developing on social constructivist perspectives, in specific reference to the online environment, Garrison and Anderson in their 2003 publication *E-Learning in the 21<sup>st</sup> Century: A Framework for Research and Practice* put forward that “a community of learners is an essential, core element of an educational experience when higher order learning is the desired learning outcome” (p 22) and that “the idealised view of higher education, as a critical community of learners, is no longer just an ideal, but has become a practical necessity in the realisation of relevant, meaningful and continuous learning” (p 23). To achieve this, however, a prerequisite is effective communication as it is this which is “at the heart of all forms of educational interaction” (p. 23) and it is the degree to which effective online communication can be facilitated in order to develop a successful community of enquiry that this paper examines.

This is not to say, however, that effective communication is the sole contributor to successful teaching and learning. The social, economic and cultural context, expectations and the attitude of teachers and learners to the process play enormous roles in defining the success or otherwise of any learning experience whether it is online or face to face. Nevertheless, while a learning experience may succeed in spite of the challenges presented by one of these factors, it is almost inconceivable that it would do so without successful communication

### **Facilitating effective communication online contingent on different online learning environments**

A considerable amount has been written about strategies and approaches for practitioners designing and teaching online courses (Hilts 1998; Palloff & Pratt 1999; Collison et al. 2000; Salmon 2000, 2002; Moore & Brooks 2000). These have provided valuable guidance and insight into how online learning technologies such as discussion boards, synchronous chat environments, email and other online applications such as instant messaging can be used. It is wholly appropriate that these publications should address these issues as the nature of asynchronous and synchronous mostly text based communication, especially if blended with traditional modes (such as tutorials or lectures), has challenged educators to reconsider their teaching approaches within these new contexts. For example, while a seminar previously would last for two or three hours on campus and not exist at all for distance learners, many are now “always on” and educators expected to facilitate discussion. However, the focus of much of this literature has been on the instructional design and facilitation strategies for teachers engaged in the development and provision of courses within these technologies and little has approached the pedagogical impacts of the systems and tools within which this design and facilitation must take place.

This is particularly important as tools and systems reflect and shape communication. Derek Powazek in *Design for Community* (2002) describes how different tools promote different forms of interaction on the Web and in particular how these tools are situated (for example, behind administratively controlled authentication systems or controlled through *karma* points) impacts dramatically on the kind of interactions that take place within them. Also, as noted by Crystal (2001) the style and kind of interaction found in email, instant messaging, SMS and traditional mail vary dramatically and this has much to do with the nature of the technology. Consequently, it is reasonable to assume that as with certain physical spaces and consequent social dynamics (for example, talking alone in a small office with someone or presenting to a large group in a lecture theatre), the spaces and arrangements of technology will, dependent on context and use, impact on the kind of communication that takes place.

However, as previously stated, the focus has tended to be on what can be achieved through particular technologies rather than what it is that these technologies themselves can facilitate. One possible reason for this is the burden that the past has laid on our current approaches to technology and to illustrate this Liber (2004) cites Antonio Dias de Figueiredo in his presidential address to the European Commission’s PROMETEUS initiative:

Most current developments in the use of modern technologies in education and training are ... little more than relatively naïve transpositions to new environments of the much criticised educational paradigms of the past. Driven by an invisible force that calls us to the past, we seem to keep putting emphasis mainly on the delivery of information, that is, of content, almost completely disregarding interaction and activity – the context, the completely renewed social and cultural contexts that the new technologies are pleading to offer us. (de Figueiredo 1998)

There are also, of course, other significant reasons, besides the development or otherwise of educational paradigms. These include a lack of experience with the technology, a possible lack of understanding of the communication dynamics of OLEs, the dominance of the discussion board model as the key tool in many OLEs, the limited availability of alternative OLEs in which experimentation can occur (Paulsen, 2002) and institutional pressures to adhere to and take up new corporate funded applications.

Arguably, with the innovation and development of information and communications technologies over the last decade, educators have, in many cases, been left with fewer choices of teaching and learning environment than our predecessors had when desks were often welded into rows. Indeed, as online learning has now long been acknowledged to be widespread (Stephenson, 2001) and with one or more courseware management systems employed as OLEs in all of Australia's 34 Universities (Paulsen 2002) a degree of critical reflection on not only the pedagogy that we can use with these but also the pedagogy able to be effectively facilitated through the technology which has been employed would seem appropriate and necessary.

### **Judging the efficacy of OLEs for supporting social constructivism and communities of inquiry**

To set about an examination the author has taken as a guide the framework for research and practice set out by Garrison and Anderson (2003) for achieving a successful community of inquiry composed of "teachers and students transacting with the specific purpose of facilitating, constructing and validating understanding, and of developing capabilities that will lead to further learning" (p. 23). This framework states that three key elements of any community of inquiry are cognitive presence, social presence and teacher presence, and each must be considered when evaluating an e-learning experience.

To apply this model to an OLE, it is necessary to consider to what degree the environment itself, and any inherent principles contained within its design, facilitates or obstructs the development of social, cognitive and teaching presence. As will be argued, the degree to which each of these can be achieved is dependent to a large degree on the communication tools within an OLE.

**Social presence:** Social presence is defined by Garrison, Anderson and Archer as "the ability of participants in a community of inquiry to project themselves socially and emotionally, as "real" people (i.e. their full personality), through the medium of communication being used" (2000 p. 94). Social presence is perhaps the most obvious of elements to be influenced by the medium through which learners communicate (in this case the OLE).

**Cognitive presence:** Garrison, Anderson and Archer describe cognitive presence as "the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry" (2001 p. 11) and in essence an OLE could be seen to facilitate this in the degree to which it can support "sustained reflection and discourse" and also through any constraints or opportunities presented by the system which hinder or enable a learner in their attempts to "construct and confirm meaning". In many ways this is the defining element of the educational experience and is impacted on most by the nature of discourse encouraged through an OLE.

**Teaching presence:** Anderson et al. (2001) view teaching presence as "the design, facilitation and direction of cognitive and social processes for the purpose of realising personally meaningful and educationally worthwhile learning outcomes". In terms of OLE use, this can be assessed by the extent and degree to which the tools available empower the teacher to impact on the learner and learning environment and whether the teacher is able to design, facilitate and direct the learning experience towards "educationally worthwhile learning outcomes".

### **The ubiquitous online learning environment: Is it the complete answer?**

#### **Discussion boards in online learning environments**

There are currently over 50 OLE environments commercially and non-commercially available (Edutools 2004) and countless "in house" developments in place. However, Paulsen (2002) points out that of these, over 95% of Australian Universities surveyed in 2002 were using either one of two major OLEs. While it

is reasonable to argue that there are significant differences between these solutions (EduTools 2004), and indeed between versions and products offered by these companies, it is equally possible to point to similarities, especially in terms of communication tools. Both these major OLEs use a discussion board format as their primary communication tool and these tools are in functionality (if not in appearance) very similar. Both essentially allow users to post messages to a shared area or reply to existing messages in order to form a thread. Both are limited to their current environment and do not provide email, messaging or syndicated updates to users, and both are proprietary to the companies which use them. In addition to this facility both provide a synchronous communication tool, functionality to allow teachers to post announcements to students and an internal messaging component similar to email but significantly often unable to be forwarded to users email accounts.

However, in considering the use of these tools, while a synchronous environment is important for the provision of fixed time and online place communication such as online seminars or *office hours* it is of limited use when many of the students are enrolled in the course primarily because of its flexible and asynchronous nature. Also, while messaging or mailing systems are of use, and they serve to do little more than email or mailing list functionality, and especially when they have no connection to individual students email accounts (hence offering no “push” facility (Mack 1998)), they add little to the overall communication dynamics of the OLE. As a result, the primary tool of use within these environments is the discussion board and it is this which requires examination in order to understand the degree to which the OLEs used by most Australian universities are able to successfully facilitate the development of communities of inquiry.

### Limitations of discussion boards in facilitating communities of inquiry

Discussion boards can vary immensely in the kind of communication they can successfully facilitate. Yahoo! Groups (2004), for example, utilises discussion boards that function primarily as email groups. Many support sites and community areas use discussion boards for particular issues or questions, notifying users of responses to their queries through email or syndication, and the threaded message discussion board format is often used (with or without email or syndication) in comments functions on weblogs (e.g. Farmer, Levine), in online publications (Guarak et al. 2004) and some online popular media (e.g. Slashdot). However, as previously discussed, major OLEs use very similar discussion board tools containing particular key features and it is these features which facilitate and sometimes require a particular kind of behaviour from teachers and students alike, encouraging certain types of communication and discouraging others. Once the user has entered the discussion board environment, these communication features essentially allow users to read previous messages (by either clicking on a title or expanding a number of messages from just their title), post a new message to a discussion board and post a reply to a previous message (in this case forming or contributing to a thread).

In terms of **social presence** this kind of discussion board could be seen to offer little opportunity for users to “project themselves socially and emotionally, as ‘real’ people” (Garrison & Anderson 2003) as the opportunity for projection is limited and when and if it is achieved, the ability of the projector to project and appear as a “real” person is also severely limited. For example, in a face to face context individuals are able to project themselves in many ways, primarily through verbal and physical contributions to the people present in the area. However, in a discussion board, as well as being limited to the ability to express themselves through text, users are unable to express themselves to people in the area because there may not be any people there. A contribution can be viewed and read by one person, the whole group or nobody and because how a writer understands the intended audience of their work dramatically impacts on their entire approach to the task of writing (Abdullah 2003), this uncertainty impacts considerably on the ability of the individual to project themselves. Further to this, it is worthwhile to note the increasing use of detailed signatures on discussion board postings around the Web as this is arguably due to the need, as seen by users, to project and convey themselves as real people (the signature may contain a picture, a link to a personal website, a quote or any other identifying characteristic) and in this sense demonstrates the inadequacies of the traditional discussion board model in the same ways that the emergence of emoticons has demonstrated the inadequacies of text based email.

In establishing **cognitive presence**, issues associated with the lack of any definable audience do not only affect the nature of the way in which an individual writes, but also the discourse possible and in this the ability of a writer to reflect on their thoughts and “construct and confirm” meaning. In a face to face

context a statement or question, particularly as part of a discussion or structured class environment, generally elicits a response from someone within that area. The utterance can be directed towards an individual or a group and a following utterance can be expected. This forms the basis of any discourse in which meaning can be constructed. However, in a discussion board it is not possible to know who, if anyone, will be reading an utterance, when this will occur or, unless the user is permanently logged in to the discussion board and regularly hitting the refresh key, the moment at which this occurs. This is not dissimilar to entering a room that may or may not be frequented by the people you wish to communicate with (who will, in either case, be invisible to the user), leaving a message on the table and then returning each day to see if someone has responded to the communication. Likewise, any person responding to the message would have to visit the room each day to see if the writer or anyone else has replied to it. The room may be one of many rooms (there are frequently numerous discussion boards used in a single course) and there may be little or no reason other than to check for messages or responses that a person may have to visit it. After several days of this kind of discussion it is likely in many cases that a user will visit the room less, if at all.

In developing **teaching presence** in a discussion board environment the teacher has no more capacity than the learner in terms of sustaining discourse or of projecting him or herself as a “real” person. While it is likely and helpful to the teacher that they will be better known to all the learners and have official contact details, in the discussion board environment the teacher is rendered unable through the technology to exert any more influence than a student and hence faces considerable challenges in designing, facilitating or directing “cognitive and social processes”. As an experienced teacher and writer in the area of online teaching and learning mentioned to the author when discussing the use of discussion boards from a teacher’s perspective, “they just bypass me and ignore me, it’s like I’m not even there!” (Farmer 2004). If considered in a face to face context this is not dissimilar to enforcing the teacher to not stand, not position themselves any differently to the learners and not to use a whiteboard or any form of presentation, and while this might be seen to be advantageous by some, its impact on facilitating the development of effective teacher presence is significant.

It is important to note, however, that discussion boards have frequently been used successfully as communication tools in online learning environments (Rovai 2002, Bradshaw & Hinton 2004, Berner 2003) and hence it is inaccurate to argue that effective educational outcomes, in the form of communities of inquiry, cannot be achieved using these tools. However, while other online tools are available which facilitate different forms of communication, and while these are entirely unavailable in these dominant OLEs, it is important to examine how these could be used in similar contexts, especially, if as with weblogs, these technologies can appear to offer much in facilitating, through online communication, the effective development of a community of inquiry.

## **Weblogs in facilitating communities of inquiry**

Weblogs (or blogs) initially came into being as regularly updated websites that contained links to websites of interest to the author (Blood 2000). The name is seen by some to be reflective of their initial purpose of recording, storing for reference and sharing a writer’s journey around the web (logging the web) (Paquet 2002) and by others to be simply avoiding confusion with and building on the history of the term “server log” (Wikipedia 2004). Since its inception in or around 1996, weblogging has developed to be much more than a means of recording links to websites – although this sharing and saving remains a widespread use of the technology. A widely accepted definition of what exactly constitutes a weblog is “a website which contains periodic, reverse chronologically ordered posts on a common webpage” (Wikipedia 2004), and the functionality that allows this is generally that which allows users (who are generally single authors) to:

- frequently add to their weblog through simple webpublishing technology
- publish items uniquely by time and date of publishing
- attach to items the facility for comments to be added and for postings elsewhere that have linked to that item to be *tracked back*
- publish with each new posting a webfeed such as RSS or Atom.

## Frequently add to a weblog through simple web publishing technology

While weblogs are on the whole frequently published by a single author (Herring et al. 2004), there are many examples of collaborative weblogs where two or more authors publish a single weblog. However, these collaborative efforts are uncommon and often operated in a manner which befits their large audience, and as such are much more often tilted towards broadcast (which then sparks discussion) rather than dialogue between the author and readers.

Along with the increasing simplicity of tools allowing individuals to create weblogs, one of the reasons given for the explosion in the use of weblogs (Perseus 2003) is precisely the personal facility they provide. While extremely evident in diary style weblogs where subject matter usually related to publishers' daily lives and networks are almost wholly social, in the academic and professional sphere the personal nature of weblogs has been instrumental in the extensive development of use as personal online research and knowledge management tools (Paquet 2002, Fielder 2003), and as an ever evolving e-portfolio and representation of the publisher to their context. In essence weblogs allow an individual to simply publish, organise and develop knowledge in their own online space.

## Publish items uniquely by time and date of publishing

Items published to a weblog may range from text to images to video or audio as the nature of the web environment and the ease of publishing allows for all of these. Crucially, whatever the format, when each item is published it is given an individual URL either relating to that specific item or the time period (most often the day) in which it was published. This allows for a reader (or listener or viewer) to record for themselves, or cite or refer other readers to that specific posting. This method of citing specific posts, along with the development of *blogrolls* (a displayed list of links to weblogs the publisher relates to in some way) is a significant aspect in the development of the *blogosphere* and particular *blogospheres* (Bloom 2003) and is made significant use of in the development of tools such as *trackback* as described below.

## Attach to items the facility for comments to be added and for postings elsewhere that have linked to that item to be tracked back

As each item is posted under a dedicated and specific URL it can have a number of different applications automatically applied to it; these have included automated searches for the subject matter on a search engine, the facility to email the item to another person and perhaps most importantly, the ability to comment on or discuss the item using a tool similar to a discussion board and trackback any other items on the web that have linked to that specific item.

This comments facility tool allows for what has been seen by some to be more ad hoc discussion and comment on the items in a particular post. Frequently the commenter is able to subscribe to a webfeed or select that they be notified by email if another comment is added to the post. While these can develop into extensive discussions it is generally the case that if an individual wishes to comment at length or in depth on a post – or *meme* as these developing conversations are frequently referred to – they will post their thoughts to their weblog, including a link to the original post which will then be automatically harvested and presented as a link with accompanying text in the original weblogs trackback menu.

## Publish with each new posting a webfeed such as RSS or Atom

RSS, originally an acronym for RDF Site Summary but more commonly referred to as Really Simple Syndication, and the competing format Atom are XML webpages automatically published by weblogging applications that allow other individuals to subscribe through an aggregator or similar application to receive either full or in part any new items posted to that weblog.

This means that, for example, the author is able to monitor over 100 weblogs on a daily basis for any new items simply by opening an aggregator with no need to visit all the weblogs in question. Further to this, RSS is now used in the traditional publication media. The New York Times, The Guardian, The BBC, and on an academic front The International Review of Research in Open and Distance Learning, all supplying RSS feeds allowing individuals to receive new content through an aggregator.

## Weblogs facilitating communities of inquiry

As with the discussion board, weblogs can vary dramatically. Many popular weblogs, for example, have no comments facilities as they frequently attract vigorous debate and often, especially with political subjects, a degree of abuse. Weblogs can also offer very limited RSS feeds, inefficient trackback tools or comments features that do not allow for notification of new postings through RSS or Atom feeds or email. However, on the whole and at the time of writing, the features supplied by the major weblog providers allow the user to communicate in the manner described above and hence an examination of the degree to which this medium can effectively facilitate the successful formation of a community of inquiry can be prefaced by an assumption of these fundamental capabilities.

In terms establishing **social presence** it can be argued that weblogs offer a significant opportunity for users to project themselves as “real” people. Primarily the blogger is writing to their own area and context, designed to their liking (if the blogger is not a web designer there are a wide range of templates available with every provider) and developing on their previous postings from the online persona they have developed. Indeed, the fact that the blogger is also able to retain ownership of their writing, edit at will, refer to previous items and ideas, and control in its entirety the space and manner in which the weblog is published, can significantly augment their control over their expression and hence increase the opportunity to project and the motivation for doing so.

Further, while the primary tool of communication in weblogs is text, users are equally able to “photoblog”, “audioblog” or “videoblog” their entries and all of these kinds of projections are made to an audience that the blogger may well be largely aware of through currently evolving tools indicating subscribers to webfeeds as well as their hyperlinked “blogosphere”. Hence the blogger is able to express themselves through multiple media and assess, at the least, their immediate audience and, to an extent, their wider readership.

However, to simply be able to project oneself in online communication is not to be able to necessarily “construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” as stipulated by Garrison et al. to be necessary for the development of effective **cognitive presence**. Weblogs undoubtedly support sustained discourse as evidenced by the development and spread of memes and the ever developing nature of the blogosphere (Bloom 2003), but a question asked by many engaging with the technology is the extent to which this discourse is reflective, critical and purposeful. While, for example, this kind of discourse is not apparent in the majority of weblogging systems developed largely for socialising among teenagers, the charge that this invalidates the medium is inappropriate due to the breadth of use of weblogging.

A weblog is a reflective medium (hence comparisons with and use as journals and diaries), and the nature of publishing to an audience in a manner that will be archived, can be referred to and for which the author maintains responsibility and ownership has developed a certain style of expression. Certain research (Herring et al. 2004) across the blogging spectrum has indicated that there is a possibility that weblogs encourage significantly more in depth and extended writing than communication by email or through discussion board environments and yet less extensive than more formal modes of publication, producing in an academic sense a kind of discourse somewhere between the conversational and the article. The value of this is evidenced through numerous examples of academic weblogs taking advantage of weblogs in order to engage with their peers and students and to reflect on their own learning (e.g. PhDWeblogs, Crooked Timber).

It could be argued that in terms of facilitating effective **teacher presence**, weblogs are even less potent than discussion boards in their ability to empower the teacher to design, facilitate or direct cognitive and social processes towards valuable educational outcomes. This argument can be based on the premise that a teachers weblog is essentially entirely separate to a learners weblog and the learner under no compulsion to read the teachers weblog. However, Clay Shirky observed in his essay “Power Laws, Weblogs and Inequality” (2003) that invariably, weblogs fall into a “balance of inequality” in the same way that any system does if allowed “the very act of choosing” which “spread widely enough and freely enough, creates a power law distribution”. Effective use of a weblog by a teacher arguably places them as an organic central node to the class, and given the simplicity with which students would be able to aggregate their webfeed and the selective “push” nature of this kind of aggregation – where webfeeds are,

despite being “pulled” by the users aggregator, apparent to the end user as a pushed form of communication in much the same way as email – it is far more likely that the teacher will be able to facilitate and direct cognitive and social processes.

In terms of design, however, it appears in a basic sense that there is little in weblogs that can be controlled in order to reach this outcome. While discussion boards can be placed alongside content in packaged courses and with limited opportunities to use the technology in ways unforeseen by the designer, a weblog is essentially free form and there is little, besides providing templates, guidelines and facilitating the group as a whole that the teacher can do to actively impact on the technical structure of their experience. However, to introduce the metaphor of the traditional classroom, it is reasonable to ask to what extent cognitive and social processes can be impacted on and to what degree this is desirable within any context. For example, if a class is rigidly structured so that activities take place at fixed and inflexible times, contains set subject matter and students are assessed through standard matrixes, the teacher takes little consideration of the benefits of learner driven experiences, and the vastly different requirements and approaches of individual students as stressed by Gardner (1989). Naturally this is not to say that an anarchistic structure is appropriate but rather to suggest that one of the key attributes of weblogs is that they have within them “incorporated subversion” (Squires 1999) which allows learners to express themselves and explore their context in ways independent of the original designers intentions:

Rather than design with constraint in mind, design with freedom and flexibility in mind ... this emphasises the active and purposeful role of learners in configuring learning environments to resonate with their own needs, echoing the notions of learning with technology through “mindful engagement” (Squires 1999 p. 1)

Consequently, to introduce another physical and familiar metaphor, it is not to the town planners’ city that one might look when designing the communication tools of an OLE but rather to the “natural” city, evolving as it has done to meet the needs and actions of the individuals within it. Writing in 1965, Christopher Alexander compared the tree like structure of the modern, designed city to the semilattice of natural cities and concluded that:

For the human mind, the tree is the easiest vehicle for complex thoughts. But the city is not, cannot and must not be a tree. The city is a receptacle for life. If the receptacle severs the overlap of the strands of life within it, because it is a tree, it will be like a bowl full of razor blades on edge, ready to cut up whatever is entrusted to it. In such a receptacle life will be cut to pieces. If we make cities which are trees, they will cut our life within to pieces. (Alexander, 1965)

And as our teaching and learning environments increasingly move online, it is precisely this opportunity of operating as a “receptacle for life” which weblogs provide, as opposed to the delineated structure of a discussion board. This allows a teacher to implement designs, critically incorporating subversion, which can be argued to give a learner an opportunity to realistically develop “personally meaningful and educationally worthwhile learning outcomes”.

## Conclusion

The OLE market in Australia is dominated by two systems and as the provision online of whole courses and components of courses grows for both distance learners and those on campus, the impact of these systems on teaching and learning in our institutions grows similarly. As a result it is critical that these systems provide online communication tools that are able to best facilitate the development of communities of inquiry online. As this paper has demonstrated, if the discussion board tool, which forms the basis of asynchronous online communication in both systems, is examined as to the degree to which it is able to facilitate the development of effective social, cognitive and teacher presence, serious doubts are raised about its suitability. Under similar examination, weblog technology can be theoretically seen to more effectively meet the needs of educators seeking to establish a community inquiry online. Consequently, while discussion boards may have a role to play in the shaping of future OLEs it is arguable that this role should be complemented by the implementation, within or alongside these systems, of weblogging functionality.



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**Please cite as:** Farmer, J. (2004). Communication dynamics: Discussion boards, weblogs and the development of communities of inquiry in online learning environments. In R. Atkinson, C. McBeath, D. Jonas-Dwyer & R. Phillips (Eds), *Beyond the comfort zone: Proceedings of the 21st ASCILITE Conference* (pp. 274-283). Perth, 5-8 December. <http://www.ascilite.org.au/conferences/perth04/procs/farmer.html>

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