

E-Primer Series

No. 4: Online discourse

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4.0 Online discourse

Communication is at the very centre of education, so it's not surprising that educators have rapidly adopted recent developments in Information and Communication Technologies (ICT) to improve the reach and effectiveness of their teaching. Successes with online bulletin boards first emerged from studies in the late 1980s (Mason & Kaye 1989), and innovation with desktop videoconferencing soon followed. Instructors who want to engage distance learners or interact with their on-campus learners in new ways can now choose from a variety of proven online applications.

In this e-primer, you will discover both the promise of formal online discourse (that is, conversation mediated through internet tools) for education, and good practice. Throughout, I encourage you to apply online discourse in ways that are conducive to teaching and learning. The focus in this e-primer is more on the discourse than the technology although, inevitably, we will consider technology. In E-Primer 5, *E-xtending Possibilities*, we will look at interactive journals (blogs), collaboration through wiki tools, working with ePortfolios, and the potential of social networking tools such as MySpace and Facebook for education. Here, in E-Primer 4, we will limit our attention to synchronous chat, desktop audio- and videoconferencing, and the online bulletin or discussion boards that are common in learning management systems (LMSs). Because LMSs are commonly used in distance education and blended learning courses (MacDonald 2006; Hopkins et al 2008), we'll look closely at them and their features.

Many different primary research studies have informed this e-primer. On the one hand, this focus on primary studies is consistent with my own preference for evidence-based practice. However, this focus is also problematic because of the variety of assumptions, approaches, methodologies and contexts that make each case study unique. Because contexts are not typically well described in studies (Thorpe 2008), it is difficult to come to specific and transferable conclusions. This e-primer picks up on themes that appear consistently across various studies, and inevitably relies on generally agreed observations rather than perfectly unanimous findings. Spitzberg (2006:np) observed that '(t)here is a tendency, especially in the early stages of theorising that follow the diffusion of new technologies, to over-attribute effects to technology and under-attribute effects to individual and social contexts'. As we will see, effective design and facilitation are likely to result in successful online discourse, but ultimately the learners themselves – not the technologies (or even, to some extent, the interventions applied) – will determine the degree of success.

Terminology

One more thing. In E-Primer 2.1, *E-education and Faculty*, section 2.1, I explained my use of the term *faculty* generically, to include 'teachers, instructors, tutors and any educators employed in an academic capacity'. I use the term *instructor* in this e-primer in a general sense, as most of the literature drawn on for this work uses that term.

4.1 Online discourse in context

The term *online discourse* represents many different forms of communication, ranging from synchronous (same time) to asynchronous (different time), and from text-only to voice, video, and all three combined.

As we saw in E-Primer 1, *E-learning in context*, e-learning suffers from inconsistent use of vocabulary across its theory. We also tend to use terms that may not be familiar to those outside e-learning circles. The terms used in this e-primer (and some others common to literature) are explained on the following pages.

Asynchronous	Communication that doesn't require same-time interaction. For example, email is asynchronous, in that email correspondence does <i>not</i> require the recipient of the message to be involved with the message as it is being prepared (unlike synchronous telephone conversations, for example, where the generator and recipient of the message are both involved at the same time). By using asynchronous techniques such as letters, email, and discussion or bulletin boards , you can communicate across time. Asynchronous online discourse is not limited to text. You can easily record audio and video from your desktop, and upload the files into your LMS (perhaps as attachments to discussion board messages) or an online repository service such as YouTube.
Chat	A synchronous , text-only activity, in which two or more people type messages to one another in an online application in the same virtual space. Messages are typically revealed by their writer one comment at a time.
Collaboration	A group of people work toward a common goal, drawing from the input of all group members. Such a group may include an online instructor , but the group shares responsibility for the outcome. Further, the outcome is not pre-determined. This term is often used in contrast to cooperation .
Cooperation	Individuals work with others, with the direct facilitation of an online instructor , who is central to the process. Each participant may perform the separate tasks for a wider group, or each participant may contribute in a highly structured and pre-defined way. This term is often used in contrast to collaboration .
Discourse	Purposeful conversation or dialogue.
Discussion or bulletin board	An internet-based application that makes it possible for people to communicate asynchronously . A discussion or bulletin board accepts posts from group members and displays them online for others to read and respond to. Some discussion or bulletin board applications automatically email new posts out to participants.
E-tivity	An online activity designed to encourage asynchronous collaboration or cooperation .
Emoticon	A graphic designed to show emotions that cannot otherwise be displayed in a text-only format. Some discussion or bulletin board software provides users with a set of emoticons to indicate the mood of the message writer. You can also use text emoticons such as ;-), :(, :-P and :o). You need to read these from a 90-degree angle.
Forum	An area in an LMS where online discourse takes place. You might set up a forum for a particular topic or theme. Participants make posts within a forum – as responses to these posts build up, different threads of discussion may emerge. A forum is usually facilitated through a discussion or bulletin board application.
Instant Messaging (IM)	A form of synchronous communication that is more user-centred than chat. IM users contact each other privately (point to point) through a client application, rather than contacting others through a more public interface on a webpage. The term usually implies text-only interaction, but most IM software also enables participants to share webcam images and voice.

Lurker	A member of an online discussion or bulletin board group who does not contribute, although they read the posts made by others. Even if they don't actively participate, lurkers may follow discussion threads closely – though whether they are learning optimally is disputable. Lurkers are the online equivalent of those in a face-to-face group who listen without contributing. Alternatively, they may not know how to participate and may need more encouragement.
Online discourse	Asynchronous or synchronous dialogue and conversation that is mediated through online (internet) tools. Non-internet technologies such as the telephone, facsimile, or videoconferencing through ISDN hubs are not considered to be online. The medium of online discourse is determined by the technologies used in mediation; for example, audio-conferencing uses the spoken word. Most commonly in the literature cited in this e-primer, the term <i>online discourse</i> assumes the written word.
Online instructor	A person who oversees activity in online discourse .
Post	A message added to an asynchronous discussion forum , either at the beginning of a new thread or in response to another message.
Reflection	Considered thought on an idea or experience in such a way that inferences are drawn, resulting in new knowledge.
Synchronous	Communication that requires same-time interaction. A face-to-face conversation is synchronous because both people must be involved with the conversation at the same time for it to take place. The contrasting term to asynchronous .
Thread	A branch of asynchronous discussion taking place in a forum . Because any person's post can form the basis for discussion at any stage, the same post can give rise to further conversations in a variety of different directions. The posts of each new direction form a new discussion thread. Discussion or bulletin board software makes it easy to create new threads within the same conversation.

Most of this e-primer focuses on synchronous and asynchronous communication, and how you can use these strategies and their associated tools for effective teaching. However, before examining each of these forms of communication in detail, we'll look at the key relationships and comparisons between collaboration and cooperation, and synchronous and asynchronous communications.

4.1.1 Collaboration and cooperation compared

The terms *collaboration* and *cooperation* represent extremes in how you might structure online discourse. Understanding the difference between the two is fundamental because collaborative and cooperative discourse have very different dynamics. Collaboration is associated with constructivist thought (Garrison, 2006; Kukulska-Hulme 2004; Palloff & Pratt 2003, 2005) because it assumes that the ultimate responsibility for making meaning and relevant conversation rests with the students themselves. Collaboration emphasises communication between students, and the outcome is open. Cooperation is more instructor-centred, even if participants work in ways that are interdependent (Kukulska-Hulme 2004; McInnerney & Roberts 2004). In a cooperative discourse, outcomes and the process of the discourse are more subject to the control and direction of the instructor.

Collaboration is the more open-ended of the two modes. Van Aalst (2006) sees collaboration as dealing with the diversity of ideas, leading to the transferable skill of how to negotiate meaning from the ideas of others. Collaborative discourse needn't be constrained to discussing particular issues. Creative means such as role plays,

debates, and problem-based learning (projects) can also be the basis for online collaboration (Clark 2001).

The decision of whether to use online discourse cooperatively or collaboratively is fundamental, because your choice determines your role and the level of your engagement as the online instructor. However, the extremes of collaboration and cooperation are very hard to optimise in practice. Kanuka et al (2002) found that online instructors often have difficulty finding a workable balance between structure, dialogue, and autonomy.¹ The problem is that high levels of structure, significant instructor-centred dialogue, and reduced learner autonomy *reduce* transactional distance – that is, the perceived distance between student and instructor (see E-Primer 3, *Designing for E-learning*, section 3.1). The means for reducing transactional distance resemble cooperative discourse and not collaborative discourse. If you take a collaborative approach, you must make sure that students don't think you are aloof or uninvolved.

Although the literature shows a preference for the collaborative approach of online discourse, the relative benefits of collaboration may be more theoretical than actual. Garrison and Cleveland-Innes (2005) compared student orientation to learning (surface, achievement, or deep) over time and across different courses. They found that *how* an online discussion is structured and facilitated² has a direct influence on whether or not students adopt a deep approach to learning in online discourse, whereas the *level of actual interaction* between students (a characteristic of collaboration) did not. In the most successful course examined in the study, high instructor involvement was combined with a course design that also encouraged 'deep' as opposed to 'surface' approaches to learning. In another comparative study, Rose (2004) found that higher levels of thinking were reached more quickly in collaborative discourse. However, cooperative groups posted more messages and, over time, reached similar levels of thinking.

Overall, it seems wise to consider the final objective of deep learning as being of primary importance in formal education contexts. Any collaborative/cooperative divide is secondary. An online dialogue activity that encourages deep learning is effective and ideal – regardless of whether the activity is collaborative or cooperative. As we will see, the educational design of a dialogue is usually far more important than whether it leads to a collaborative rather than a cooperative approach.

4.1.2 Synchronous and asynchronous communications

The differences between synchronous and asynchronous communication lie in the flexibility, efficiency, and depth they afford conversation. Some studies show real differences between the two in terms of the type of engagement³ that takes place. When messages were categorised according to their contribution to the overall outcome

1 These are the three variables in Moore's concept of transactional distance.

2 Garrison and Cleveland-Innes use the term *teaching presence* to describe the structure and facilitation of online discourse. You will meet this term in more depth later in section 4.3.4, 'Teaching presence and good practice: challenges and variables'.

3 See later in section 4.3.2, 'Cognitive presence: measuring the depth of discourse'.

of the discussion, Heckman and Annabi (2005) found the following (note that results are rounded):

	Online (asynchronous)	Face to face (synchronous)
Trigger	2.5%	2%
Exploration	14.5%	68%
Analysis	58.5%	17.5%
Integration	7.5%	7.5%
Resolution	17%	5%

Table 1 – Type of engagement compared for online and face-to-face groups (Heckman & Annabi, 2005)

In Table 1 we can see the comparison between the immediate, spoken word (synchronous) and a more correspondence-oriented series of messages (asynchronous). It appears that face-to-face (synchronous) discussions are useful for exploring an issue, while asynchronous online discourse permits more in-depth analysis. Downing and Chim (2004) found that asynchronous online discourse gives introverts and those with a reflective learning style⁴ an opportunity to participate, which may help to explain the differences between online and face-to-face groups in Table 1.

Synchronous discourse is typically more time-efficient (the Heckman and Annabi study above, for example, compared a 90-minute face-to-face exchange with a 1-week long online one) and is arguably more suited to conversational treatment of a subject, particularly since internet-based tools are still not viable for the participation of a large group of people. Synchronous discourse can also work well for exploring ill-defined problems, and for learning language. Of course, the advantage of time efficiency diminishes if students must travel to a video-conferencing suite to participate.

Asynchronous discourse generally tends to be more time-flexible, is reflective in scope, and allows more facilitative negotiation of meaning. Heckman and Annabi (2005) found that while there were fewer messages in the asynchronous exchange (71 compared with 139), the asynchronous messages tended to be longer and more communal. The messages were frequently more substantial than those offered in the synchronous dialogue. Laurillard (1993:170) reports:

Analysis of tutor-student messages in a computer conference running during an Open University course showed that the average length of student contribution was 200 words, equivalent to over a minute of continuous speech, which would be rare indeed in the standard face-to-face tutorial.

4 Downing and Chim (2004) go so far as to suggest that the normally introverted reflectors become extroverts online.

Not only does asynchronous discourse result in more disclosure from more students, sentences in asynchronous online discourse tend to be more complex and formal than in synchronous discussions (Wang & Woo 2007). Heckman and Annabi (2005:np) noted that '[v]irtually all student utterances in FTF [face to face] were responses to the teacher', whereas nearly two-thirds of online messages were responses to other students. They also found that cognitive activity in asynchronous discussion was at least as good as, and sometimes superior to, that in face-to-face discussion, with students often taking on some aspects of the instructor's role.

The study by Heckman and Annabi cited here seems broadly representative of comparative studies between asynchronous and synchronous discourse. There can be little doubt that giving students time to compose their own thoughts and consider others' contributions carefully makes asynchronous online discussion forums ideal for debates, discussion of sensitive issues, in-depth exploration of ideas and concepts, and exploring others' experiences. Student reflection is also enhanced (Ellis et al 2007; Meyer 2003; Ng & Cheung 2007; Rossman 1999; Wegerif 1998). The questions posed during asynchronous interaction tend to be more considered than those that arise in face-to-face conversations (Spitzberg 2006). However, feedback is less immediate (Wang & Woo 2007).

Table 2 summarises the main differences between synchronous and asynchronous communication.

Synchronous	Asynchronous
<p>Immediacy – students are together at the same time, enabling conversational dialogue and exploration of ill-defined problems</p> <p>Spontaneity – there is room for the unexpected</p> <p>Presence – participants can see and respond easily to one another's emotional states, making it easier to enthuse others (especially in face-to-face sessions); communication is likely to better reflect student feelings</p> <p>Efficiency – a matter can be settled in minutes, whereas with asynchronous communications it might take days</p>	<p>Flexibility – independence of time and place</p> <p>Broad participation – not restricted to linear discussion, nor requiring assertive interjection</p> <p>Time to reflect – students can read and carefully consider the contributions of others</p> <p>Time to compose – students can carefully prepare their contributions before communicating them</p> <p>Review – communications are stored, and can therefore be reviewed by students (also true of recorded or archived synchronous sessions)</p>

Table 2 – Comparison of synchronous and asynchronous communication

It is possible to record synchronous and asynchronous facilitated online communications for later review. However, the benefit of *immediacy* for synchronous communications actually conceals several disadvantages for educational discourse. Firstly, unless a point is made at the right time, it may be lost; synchronous discourse is linear, capable of following only a single path. Secondly, it's not possible for everyone to

adequately express themselves in a synchronous setting. Thirdly, the many ‘rules’ associated with synchronous discussion make it a difficult mode to effectively pool ideas and opinions. Asynchronous online discourse, on the other hand, supports multiple threads of conversation in parallel. Figure 1 shows how threading works. Each number represents the contribution of a particular participant.

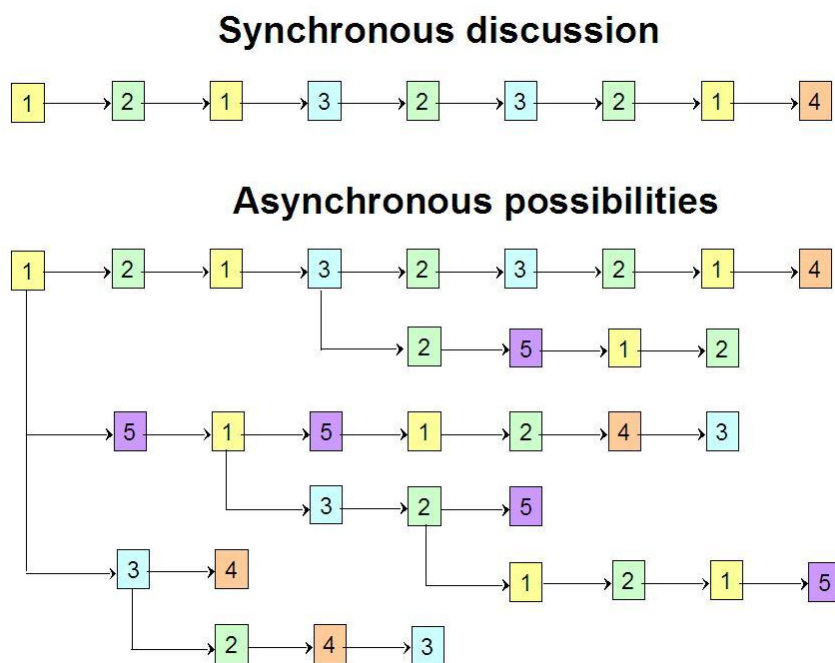


Figure 1 – Possibilities of linear synchronous discussion and threaded asynchronous discussion

It's easy to see the validity of Ng and Cheung's (2007) criticism that asynchronous discourse can be difficult to keep up with! However, by using asynchronous threaded discussion, you can:

- respond to any point made in any one else's message at any time
- have multiple instances of conversation branch out as new ideas are presented, rather than having to keep to a linear discussion
- carefully consider your own contribution and rework it before posting it for everyone else to see
- respond to a message rather than a forceful personality
- be properly heard, because if someone is going to meaningfully respond to a message, they need to think about the points that have been made⁵

5 Of course, not all participants will respond meaningfully – some will always take a superficial approach to discourse.

- involve all group members, even those who would perhaps be ignored or talked over in a face-to-face group
- refer back to points that others have made in their postings.

The effectiveness of asynchronous online discourse as a means of interpersonal communication is somewhat surprising. Far from being ‘a less “immediate”, colder, less personable experience’ (Swan 2003:148), it is frequently an enlightening, engaging, inviting and interpersonal one. The advantages of time-and-place flexibility are also significant.

Asynchronous discourse should be considered as an educational option even for predominantly face-to-face courses, as the advantages of the asynchronous mode of interaction enable more representative and reflective discussion than would be possible in a face-to-face tutorial. Still, rather than setting synchronous against asynchronous discourse, it is useful to consider how the strengths of both might be applied in complementary ways (Heckman & Annabi 2005; Mabrito 2006; Vaughan & Garrison, 2005). As a caution, though, Angeli et al (2003) found that asynchronous online discourse is particularly vulnerable if it is designed to complement classroom discussion, as students may not perceive the online discourse to be a valuable or necessary addition.

4.2 Synchronous communications

Synchronous communications take place at the same time. A telephone call and a face-to-face discussion are both synchronous, as both participants need to be present at the same time. Live online interactions are also synchronous. Online synchronous communication is generally good for:

- one-way presentations, with feedback or question-and-answer times
- small group discussions and collaboration
- dealing with complex matters that require feedback and explanation
- coming to an urgent resolution, or getting an instant answer.

Student participation in online synchronous events does not tend to be as even as it is in asynchronous discourse (Murphy & Ciszewska-Carr 2007), though online synchronous discourse is ideal for such things as research supervision, virtual office hours and learning support. Presentations and discussions with distant (such as overseas) experts are also possible.

The purpose of a synchronous meeting is fundamental to how it is conceived and managed. Try to make the most of the interpersonal potential that synchronous solutions provide, rather than presenting materials that might be better in readings, a pre-recorded presentation, or some other asynchronous medium (Murphrey, in Brandon 2008). Such sessions can be recorded and made available later, improving their flexibility.

A synchronous session might be used to:

- explain difficult concepts that might benefit from immediate questions and answers
- provide a course update for distance students
- give students the opportunity to learn from an international expert (and ask them questions)
- supervise research
- demonstrate software applications
- prompt further asynchronous discussion
- have students present their own findings
- link remote classrooms or lecture halls
- facilitate brainstorming sessions
- troubleshoot (perhaps facilitated through remote access to a user's computer)
- provide synchronous office hours (times when the instructor is available via text, audio, or audio-visual means).

Virtual visits and field trips have also been successful (Martin 2005).

Smyth (2005) suggests that broadband videoconferencing is good for one-to-many, one-to-one, one-to-some, and some-to-some communications. The same might be said of synchronous communications over the internet in general. However, many-to-many is difficult because of the required bandwidth, server-processing capacity, and the lack of real presence (making it difficult to see who is talking, and to whom).

Synchronous options include:

- *text chat*, where participants type messages to one another in real time. Examples include MSN, Skype chat, and chat facilities available in LMSs. While some facilities are text-only, many also facilitate more complex forms of interaction including voice and video (see below).
- *voice-over-internet tools* are essentially internet telephones. Skype (<http://www.skype.com>) is the best-known example. With voice-over-internet tools you can use a multimedia headset to talk with others. Skype features additional features such as teleconferencing, file transfer, webcam options, and the ability to call regular phones (for a fee).
- *meeting tools* such as Adobe Connect Pro and Elluminate are flexible applications that make it possible to present slideshows and other images online, and to discuss them in real time. Connect Pro facilitates webcam sharing and screen sharing (the meeting facilitator's screen is displayed on participants' computers), which is ideal for demonstrating how a particular computer application works. Participants can go to break-out rooms to collaborate, then report back to the main group. Text chat is typically available to all participants during the session, and participants' own microphones can be enabled to facilitate voice conversation. Entire meetings can be recorded and played back to anyone who has permission.

- *virtual worlds*, where *avatars* or virtual representatives interact using live chat or (increasingly) voice. One example of this is Second Life (<http://www.secondlife.com>), where experiments with live education classes are already taking place. Massive Multiplayer Online Games (MMOGs) such as *World of Warcraft* are also virtual settings for synchronous collaboration and communications.

Martin (2005:403) confidently asserts that ‘robustness of technology is no longer an issue’, but the configuration of participants’ computers and the limitations of dial-up or low-end broadband internet connections are still problematic. Non-chat synchronous options tend to require significant bandwidth, so are not typically used to their potential in mainstream e-learning. But overall, synchronous applications have reached a level of reliability and accessibility that make them a real option alongside other techniques. Even the most conservative institution might use synchronous applications from time to time, confident in their students’ ability to participate.

Littlejohn and Pegler (2007:58) list some of the drawbacks for participants of synchronous communications: knowing whose turn it is to speak, the uncertainty of whether anyone is actually listening; time lags in audio and video; technical difficulties; time differences for those in different time zones;⁶ and, particularly for text-chat, identity confusion. The greatest barrier to synchronous applications is that they require participants to be present at the same time, which is not always convenient for part-time students.

There is evidence that many students already use synchronous text-only chat outside the formal classroom context for educational purposes (de Bakker et al 2007). However, the extent to which this can be deliberately exploited in terms of course design (and even whether it should be), remains unclear.

Rutter (2006) identifies some more issues arising from text-based synchronous chat:

- Long or complex messages are difficult to convey, and are usually completed over numerous lines.
- You need to type quickly.
- You need a skilled facilitator.
- Effectiveness is difficult to quantify.

MacDonald (2006:100) describes chat as ‘anarchic and unhelpful’ as a primary means of communication in formal education; its real benefit seems to be in support of other synchronous techniques, as Joiner et al (2003) and Murphy and Ciszewska-Carr (2007) suggest. However, Nicholson (2002) found that online students reported IM to be an easier, more immediate, and more private means of communication than asynchronous discussion boards, and Hrastinski (2006) found that adding IM to a course that already used asynchronous discussion empowered some students to increase their participation. IM, it seems, can find a complementary place in online settings.

6 It was a great surprise for me to discover that I am the example they cite for this on page 52 of their book.

4.2.1 Bringing live to life

(Note: The following comments apply mainly to synchronous audio and video presentations, as these are more complex to prepare and facilitate than text-only chat.)

Hosting an online presentation requires both managerial and teaching skills, as you must manage interjections and questions carefully, and that's not as easy as it might be in a classroom. If you use applications such as Connect Pro and Elluminate, students can use a chat interface during the presentation, but if they want to speak they must usually request permission from the meeting host. For a large group, have a meeting facilitator to support the presenter, so the presenter is not distracted with managerial responsibilities, and to ensure that you don't lose any questions. It's also a good idea to show an introductory slide as participants enter the meeting, reminding them of the rules of engagement.

The following might be useful as a guide:

- Please optimise your meeting settings. [*Include instructions on how to do this.*]⁷
- The presenter will talk for about 30 minutes.
- There will be time for specific questions at the end of the presentation. Use the chat client for your questions.
- At the end of the presentations, show that you want to speak by raising your hand. [*This is a status option.*]
- Use the private chat option if you want to communicate with other class members. Use public chat only if your message is for the whole class.

Of course, students may be free to interject at *any* time during the meeting. These suggestions for an introductory slide indicate the type of things students might need to know. Such a slide clarifies directions, and will help keep the meeting on track, both of which are important aspects of practice (Driscoll 2002).

At first, you may be unnerved when you use a synchronous application to give a presentation. In synchronous applications, speakers usually talk into silence, and there is no body language to gauge audience feedback. Be realistic; synchronous applications are unlikely to generate the same heat as a classroom debate, mainly because participants must take turns, and it is difficult to interject. Break-out groups (facilitated through synchronous applications such as Connect Pro and Elluminate), where participants can discuss ideas in smaller groups before reporting back, can encourage better interaction between participants.

Synchronous sessions must be carefully prepared ahead of time (MacDonald 2006). Having clear rules for exchange, making sure students have all the resources they need, having a strategy for welcoming students and latecomers, and constantly using feedback techniques (requiring students to respond to questions) all help to maintain the momentum and ensure that students follow and contribute to the session.

⁷ Optimising meeting settings is particularly important for participants who connect by dial-up. Users might be able to select a particular connection setting or limit video, and thereby make the incoming audio a bit smoother.

When you plan to use a synchronous tool, prepare all of your graphics and interactive components in advance. Participants should also test their connectivity and computer systems before an important meeting. Open your meeting 10 minutes before it starts so you have time to sort any technical issues.

Start and finish on time. This is good practice that will avoid frustration and avoidance behaviour in future meetings.

Limit the use of video, and give the participants a teleconference (telephone) number – this can improve online dynamics. Dial-up users will naturally be at a disadvantage. MacDonald (2006) also recommends using students' names in synchronous messages, and encouraging non-participants to contribute, perhaps by taking turns.

Just as it is in real classroom environments, silence is an excellent technique for encouraging participation because of the opportunity it provides (Murphy & Ciszewska-Carr 2007). As a general rule, synchronous meetings should not be longer than about 45 minutes (Henschell, in Brandon 2008) in discrete 5-7 minute segments separated by discussion or time for reflection (Driscoll 2002).

Small groups work best for online synchronous discourse. Recommendations range from 6-8, to fewer than 15 (Murphy & Ciszewska-Carr 2007).

4.2.2 Choosing technologies

If an institution has an LMS, it probably doesn't need to choose a discussion or bulletin boards tool, because they are usually already incorporated in the LMS. However, the institution must decide which platform to adopt for synchronous communications beyond chat.

There are many options, each with their own features, potential, limitations, and risk.

A number of free online tools provide both asynchronous and synchronous options. Email and further communications services (such as chat clients with audio-conferencing) are available through providers such as Google (<http://www.google.com/a/help/intl/en/edu/index.html>) and Microsoft (<http://get.liveatedu.com/Education/Connect/>). Students can use these to communicate among themselves outside of a virtual classroom. Skype (<http://www.skype.com/>) is another popular tool that might fit in this category.

Applications for creating virtual classrooms are also available online. WiziQ (<http://www.wiziq.com/>) and Dimdim (<http://www.dimdim.com/>, open source) are examples of free services. Flashmeeting (<http://flashmeeting.open.ac.uk/home.html>), Microsoft Office Live (<http://office.microsoft.com/en-gb/livemeeting/default.aspx>), Elluminate (<http://www.illuminate.com/>), Wimba Classroom (<http://www.wimba.com/>) and Adobe Connect Pro (<http://www.adobe.com/products/acrobatconnectpro/>) are examples of commercial synchronous technologies. Each has particular advantages, and some have been specifically developed for education.

I suggest the following guidelines for choosing and implementing tools.

- Start with your objectives.
- As much as possible, use the tools in your LMS.
- Use as few applications as possible to achieve your desired functionality.
- Consider the users' experience (include a typical technology setup in your deliberations).
- Carefully compare the options and limitations provided by each solution.
- Investigate the total cost of ongoing licensing and operations. Hosting and internet traffic expenses, for example, might be considerable – especially for online audio- and video-conferencing solutions. External hosting services may also be sensitive to peaks in internet traffic.

Bates's (2005:49-50) ACTIONS model is useful for evaluating potential solutions.

- *Access*: How accessible is a particular technology for the targeted learners?
- *Costs*: What is the cost structure of each technology? What is the unit cost per learner?
- *Teaching and learning*: What kinds of learning are needed? What instructional approaches will best meet these needs? What are the best technologies for supporting this teaching and learning?
- *Interactivity and user-friendliness*: What kind of interaction does this technology enable? How easy is it to use?
- *Organisational issues*: What are the organisational requirements, and what barriers need to be removed, before you can use this technology successfully? What organisational changes need to be made?
- *Novelty*: How new is this technology?
- *Speed*: How quickly can changes be mounted with this technology? How quickly can materials be changed?

When applying ACTIONS, don't take interactivity and user-friendliness for granted. User-testing on a variety of computer hardware and operating system configurations and internet connections is a must. However, the organisational issues often prove to be the most challenging. Because applying different technologies raises issues of user training and support, any decision to adopt a synchronous technology is a big one. Individual instructors may be attracted to free tools; however, these might be untenable across an entire institution because of administrative requirements and their associated risk. On the other hand, a low-risk option will probably require a longer-term commercial partnership unless there is a large open-source community to support the technology. Choosing an online synchronous audio- or video-conferencing application is an important and complex activity that requires an understanding of institutional needs, and active investigation of alternatives.

4.3 Asynchronous communications

Choosing asynchronous communication technologies is more straightforward than choosing synchronous technologies. Since most higher-education institutions already have an LMS, and options such as personal email are common, instructors are more likely to have to choose which asynchronous option to apply rather than which tool to buy (see Table 3).

Asynchronous options	All/group/individual	Functions
Personal email ⁸	Individual	Useful for personal or unforeseen matters Private and highly customisable
Discussion board: Notices	All	Instructor-initiated Useful for reaching entire class at once Responses are usually requests for clarification
Discussion board: Cooperation	All/group	Takes place over a discrete and pre-determined timeframe Students post in response to a clear question or issue, offering their perspective Responses not usually necessary, but encouraged; one or two responses to others' posts might be required Useful for helping to pace students A summary post is helpful for concluding the exercise
Discussion board: Collaboration	Group	Requires extended time periods Requires clear expectations and a subject worthy of discussion Encourages extended interaction between students

Table 3 – Characteristics of asynchronous options

Using a discussion board for facilitating notices is different from using it for a cooperative task, which is different again from using it for a collaborative task (see 'Collaboration and cooperation compared', section 4.1.1). Generally, collaborative tasks take place over longer time periods and require more interaction than do cooperative ones.

Using media other than text is certainly possible in asynchronous communication. In a recent study, Ice et al (2007) described the effectiveness of providing feedback to students using asynchronous audio rather than text. The enhanced sense of instructor presence made students feel the instructor was more involved with them and cared more about them. Students were also better able to understand nuances of meaning through the instructor's voice rather than just text.

8 Email tools within LMSs tend to be very poor. If possible, link your LMS-based email service to personal accounts outside the LMS.

Asynchronous discourse facilitated through text has a rich literature associated with it, but there are very real difficulties in drawing out principles that are both transferable and useful because primary studies are always based on a particular context that is seldom well described (Hammond 2005; Thorpe 2008). Case studies differ in terms of cultural setting, level and type of course, and instructor dynamics, not to mention different forms of implementation through such things as level of compulsion, length of discussion, and emphasis of cooperation or collaboration.

4.3.1 Literature-based analysis of asynchronous text communications

The main advantages of asynchronous communications – flexibility, broader participation, time to reflect, time to compose and review – were itemised in Table 2. There are other benefits. Asynchronous discourse usually requires students to be informed before they contribute. This means that you can use asynchronous online discourse to pace students through course materials (this is particularly useful for distance education). Asynchronous communications tools also provide instructors with unique learning possibilities that have not been available in on-campus instruction, and online discussion can provide instructors with valuable insight into their students' progress and understanding of course materials. Students who contribute to online discussions give vital clues as to their progress in the course and general orientation toward the subject matter. A student who has not attended or contributed for a while may need some follow-up assistance.

Reflection and discourse, says Garrison (2006:25), are 'the heart of a meaningful educational experience'. While researchers generally agree that asynchronous online discourse is reflective, just *how* reflective is not easy to measure. Cognitive engagement provides some insight into the educational benefit of online discourse, and is far easier to measure than student reflection. Even here, though, there are many models of analysis, and measurement can be problematic (for examples and further discussion see especially Brace-Govan 2003; Buraphadeja & Dawson 2008; Campos 2004; Garrison et al 2006; Gerbic & Stacey 2005; Haavind 2007; Hammond 2005; Han & Hill 2006; Hew & Cheung 2003; Jeong 2003; Kay 2006; Meyer 2004; Murphy 2004; Murphy & Ciszewska-Carr 2005; Oriogun 2003; Oriogun et al 2005; Potter 2008). Studies of cognitive engagement tend to differ in their theoretical framework and coding methodology (Garrison & Arbaugh 2007). Such variability makes it difficult to compare across studies (Meyer 2006). Rhetorical network analysis is one recent and promising methodology, proposed by Potter (2008). This methodology examines interrelationships *between* messages for topic drift and cohesiveness, using the categories of contrast, elaboration, evidence, interpretation, motivation, justification, antithesis, and concession-relatedness to other messages. These interrelationships may contribute further to knowledge about how online discourse facilitates collaboration.

Analysing asynchronous online discourse is best done by referring to a model or framework, so that you can compare the results of studies more easily. Of those suggested in the literature, I will outline four – along with some of the insight they provide into the dynamics of asynchronous online discourse.

1. Interaction Analysis Model (IAM)

Collison et al (2000) suggest that online discussion goes from ice-breaking discourse through to a phase of wallowing in the shallows, followed by reasoned discourse. Similarly, the first of the four models, the Interaction Analysis Model (IAM) of Gunawardena et al (1997), suggests that knowledge construction in asynchronous online discourse progresses through five phases:

1. Sharing and comparing information.
2. Discovering and exploring dissonance or inconsistency between ideas, concepts, or statements.
3. Negotiating meaning or co-constructing knowledge.
4. Testing and modifying a proposed synthesis or co-construction.
5. Forming agreement statements or applications of the newly constructed meaning.

Phases 3, 4 and 5 of the IAM are associated with higher-level thinking, and require a strong sense of community (Brook & Oliver 2003). Some studies indicate that conversation in online discourse rarely progresses beyond Phase 2 of the IAM, possibly due to a lack of effective facilitation (Hopkins et al 2008), or a poor sense of community. Information may be shared, but it is often insufficiently used.

2. Five-Stage model

The second model is another early and popular one, proposed by Salmon (2000). Salmon's Five-Stage model identifies the steps through which online discussions tend to progress. Salmon discerns a gradual progression from social, to teaching, to cognitive presences. As with the IAM phases, Stages 3 to 5 of the Five-Stage model are the most productive levels for learning, but Stages 1 and 2 are important formative stages that must take place before productive discussion can occur. This model has further similarities with the traditional group formation stages of forming, storming, norming, and performing (Brace-Govan 2003). Salmon's model and associated writing suggest that asynchronous online discourse should consist of a gradual and purposeful progression from a welcome to the online environment, to a time of deliberate socialisation; from there to information exchange; and only from there to knowledge construction and further cognitive development.

At each stage, learners require different types of support and different interventions from the moderator or facilitator (see Figure 2).

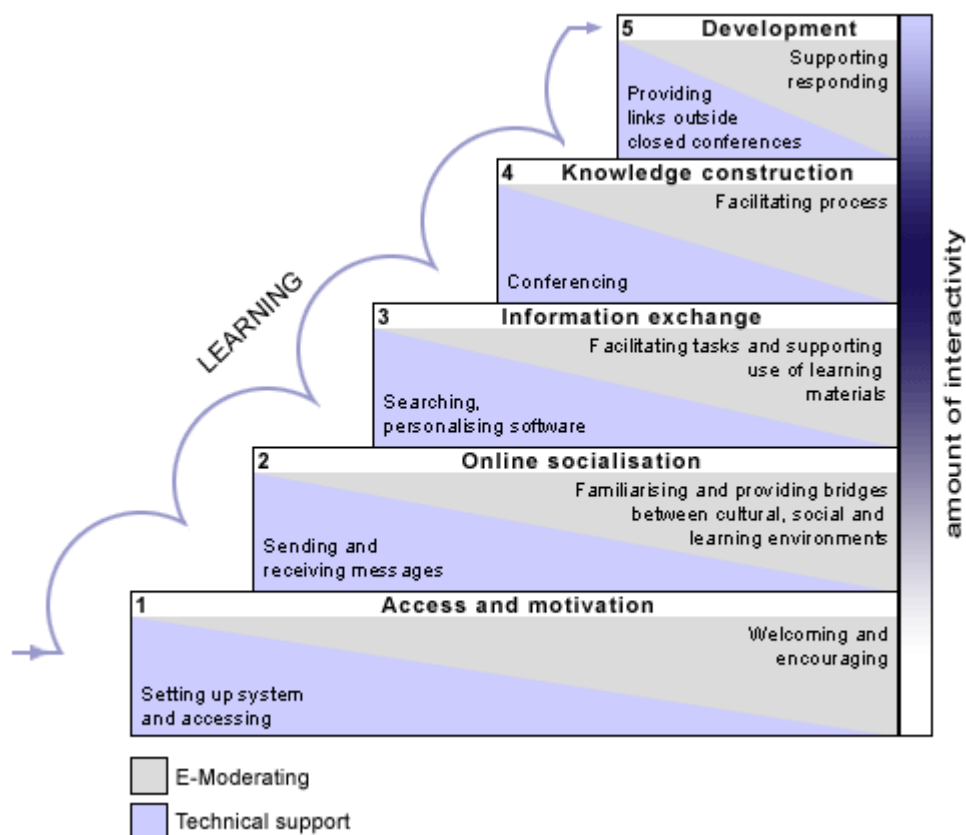


Figure 2 – Salmon's (2000) Five-Stage model of teaching and learning using CMC

3. Theory of computer-mediated communications (CMC)

Spitzberg suggests a third descriptive model (2006:649). This theory of CMC (Figure 3) shows the contextual factors that influence each member's participation in CMC environments (and, therefore, the overall outcomes of online discourse).

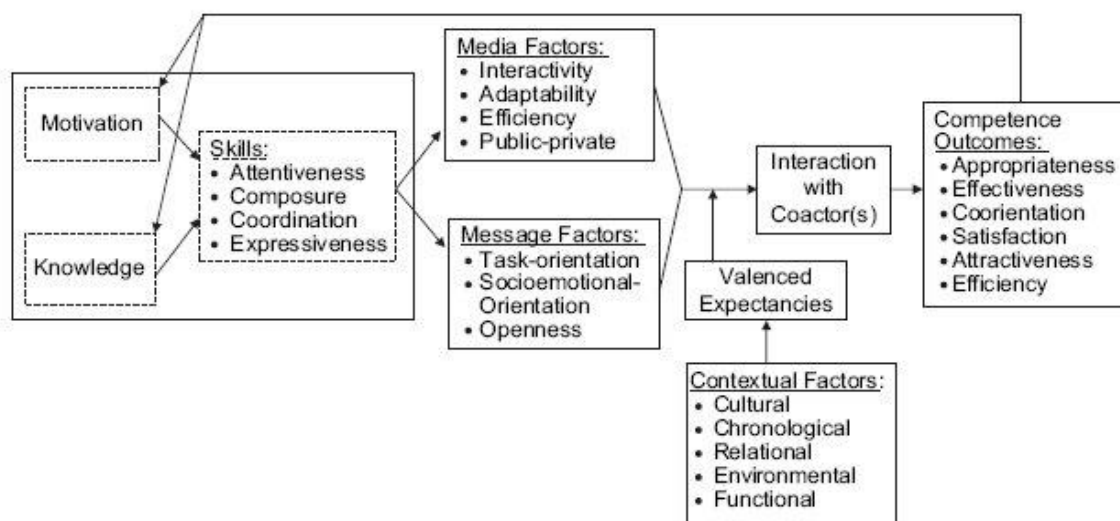


Figure 3 – Spitzberg's (2006) theory of CMC competence

Spitzberg (2006) notes that motivation and knowledge are the primary determinants of student participation in online discourse, and illustrates how the outcomes of online discourse also influence student motivation and knowledge to form a cycle of interaction. It is clear from this theory that, even in the best conditions, some students won't participate in online discourse for their own reasons, which may be associated with the technology, the general tenor of the discussion, the perceived usefulness of the conversation, the level of interaction taking place, or the ongoing effectiveness of the conversation. While the instructor (a significant co-actor, who also determines the media and message factors) has a significant part to play, the wider context proposed by Spitzberg reveals why online participation is ultimately a student choice. Indeed, Fung (2004) found that a perceived lack of time⁹ – not technical issues of access or IT literacy – is the usual reason for student non-participation. Lack of peer involvement in online discussion is also a factor. It seems that online discourse requires a critical mass of activity to maintain momentum. While the IAM and Five-Stage models focus on the gradual progression of interaction, Spitzberg's theory of CMC competence focuses on the participant, demonstrating that success in asynchronous online discourse is more complex than gradual progress from initial contact through to high-level discussion – and it involves more than just careful planning and effective facilitation.

9 This perceived lack of time could also indicate that students underestimate the level of commitment they need to make for effective online discourse.

4. Community of Inquiry

But it is the fourth and final model addressed here, the Community of Inquiry framework, which has attracted the most attention from researchers. This framework is the one used most often as the basis for measuring cognitive outcomes in asynchronous online discourse (Heckman & Annabi 2005; Hemphill & Hemphill 2007; Kanuka et al 2007; see also the table in Stein et al 2007).

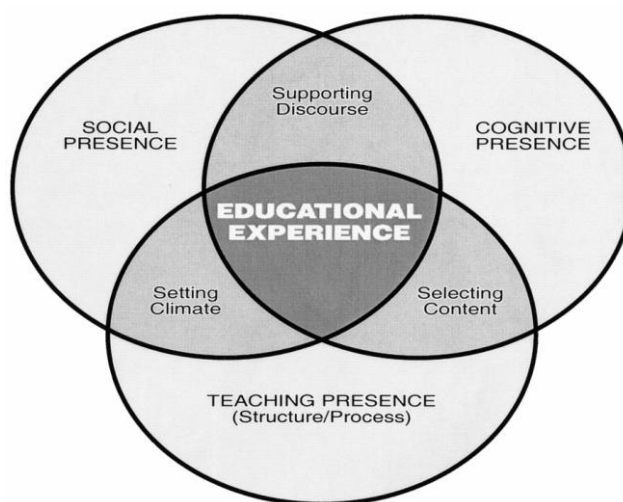


Figure 4 – The Community of Inquiry framework (Garrison et al, 2000).

The Community of Inquiry framework proposed by Garrison et al (2000; see also Garrison 2006; Garrison & Anderson 2003; Garrison & Vaughan 2008) provides the means by which we can consider how social interaction, cognitive development, and instruction relate to one another in online discourse.

The framework has three presences (see Figure 4).

1. *Social presence* is the ability of students to participate personally and authentically in the community of inquiry. Gunawardena and Zittle (1997, in Swan & Shih 2005:116) define social presence as 'the degree to which a person is perceived as "real" in mediated communication'. Such presence has an affective element (Hopkins et al 2008). Garrison (2006:27) states that social presence 'is an essential precondition for establishing a sense of community and online presence', and notes that it can be built up through introductory posts and initial exercises such as discussing the goals of the course in groups (see also Stages 1 and 2 of the Five-Stage model). The level of social presence can influence the amount of interaction that takes place throughout a course. However, high levels of interaction do not necessarily indicate high social presence (Tu & Mclsaac 2002).

2. *Cognitive presence* is defined as ‘the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication’ (Garrison et al 2004:5). Cognitive presence is the element most often evaluated in studies of online discourse. Sound design, structure, and facilitation are essential for effective cognitive presence and deep learning (Garrison & Cleveland-Innes 2005). Cognitive presence consists of four levels: *triggering events*, in which you identify problems or opportunities for discourse; *exploration*, in which you discover areas of agreement or disagreement, and define the problem further; *integration*, when you negotiate meaning; and the point of *resolution*, where you reach consensus (see also the IAM and Stages 3 to 5 of the Five-Stage model). Cognitive presence is the most difficult element to develop in a course (Arbaugh 2007), and is also the most difficult to study (Garrison & Arbaugh 2007).

3. *Teaching presence*¹⁰ is associated with the design of instruction, facilitation, and direction of instruction. It is probably the most pliable of the three presences because the instructor has direct control over their own teaching presence. Teaching presence is also the most critical element. Garrison and Vaughan (2008:25) refer to it as the ‘unifying force’. (Teaching presence is discussed further in ‘Teaching presence in action’, section 4.4.)

The framework itself acknowledges the overlap between the presences (see Figure 4). However, trying to establish just what each presence actually entails and what each term actually implies can be rather confusing. To help identify the contribution made by each presence, Garrison et al (2000:89) provide categories and indicators for each presence (see Table 4):

Elements	Categories	Indicators (examples)
Social presence	Emotional expression Open communication Group cohesion	Emotions Risk-free expression Encouraging collaboration
Cognitive presence	Triggering event Exploration Integration Resolution	Sense of puzzlement Information exchange Connecting ideas Applying new ideas
Teaching presence	Instructional management Building understanding Direct instruction	Defining and initiating discussion topics Sharing personal meaning Focusing discussion

Table 4 – Categories and indicators for social, cognitive and teaching presences

¹⁰ Note that the term is *teaching* presence and not *teacher* presence, as all participants can have an element of teaching presence (Hopkins et al 2008). Garrison et al (1999) note that the instructor has a particularly significant (as opposed to an exclusive) teaching presence.

Though most of the research relating to the Community of Inquiry framework tends to focus on any one of the three presences, the validity of the overall framework, the distinctive nature of the three presences, and the framework's ability to predict student learning and satisfaction have been confirmed (Arbaugh 2007, 2008; Garrison & Arbaugh 2007). It is clear that the three presences are codependent. Lui et al (2007:1022) describe this codependence: '[t]eaching presence must be available so that social presence can be converted to cognitive presence'. Redmond and Lock (2006) imply the benefits of a gradual progression from activities, firstly working to generate social presence, then teaching presence – which provides an effective platform for the exercise of cognitive presence. There is particularly strong evidence for the relationship between cognitive and teaching presences (Garrison & Archer 2007), indicating the critical role of the instructor in online discourse. While studies based on the Community of Inquiry framework tend to assume that you will use asynchronous bulletin boards, the interdependence of the elements in the framework have also been demonstrated to apply to synchronous chat (Stein et al 2007).

However, we must also appreciate that an instructor's role in asynchronous online discourse is more than just a social presence with some purposeful teaching presence thrown in to establish cognitive presence. The Community of Inquiry framework suggests a holistic model that is divided into three presences, rather than three presences added together into a whole. While we explore social, cognitive, and teaching presence, and mine teaching presence for principles of good practice, we must always bear in mind a holistic picture of an effective online presence. As instructors, our online presence is the sum of our availability, clarity, commitment, competence, encouragement, facilitation, flexibility, interactivity, involvement, knowledge, and relationships across the entire delivery of a course. These qualities are more *demonstrated* through the three presences than they are *determined* by them. A strong online instructor's presence has been shown to improve student satisfaction, and may also positively influence student achievement and persistence (Shin 2002). There is also evidence that maintaining an effective online presence can improve the instructor's own course satisfaction (Richardson & Swan 2003). Pelz (2004), an experienced online instructor, lists 'strive for presence' as a key principle of effective online pedagogy.

4.3.2 Social presence: the basis of community

The main weight of literature associated with online discourse assumes a social constructivist approach to teaching and learning, and frequently refers to 'community'. Social presence is an important basis for forming a functional online community.

Rourke et al (2001 in Hopkins et al 2008:34) suggest that social presence is characterised by discussion that is:

- *affective* (uses expressions of emotion, humour, self-disclosure)
- *interactive* (continues a thread, quotes from others' messages, refers explicitly to others' messages, asks questions, compliments, expresses appreciation, expresses agreement)
- *cohesive* (addresses or refers to the group with inclusive pronouns, uses phatics [social terms to generate goodwill] and salutations).

Swan found that online social presence can be remarkably affective, reporting that 'participants in mediated communication employ whatever means are available to them to create a feeling of presence similar to what they expect from their face-to-face experiences' (2003:161). Humour and self-disclosure also indicate a level of social presence (Garrison et al 2000). Students who display high levels of online social presence are more active in online discourse, and perceive online discourse as more useful. They also tend to provide more self-disclosure, report to have learned more from classmates, and use less formal writing (Swan & Shih 2005). These qualities lead them to build personal relationships, which are the heart of online community.

Garrison and Cleveland-Innes (2005:135) remark that '[a]n interactive community of learners is generally considered the *sine qua non* of higher education'. It is claimed that online community and online collaboration are intimately intertwined (Palloff & Pratt, 2001, 2003, 2005; Wegerif 1998). There is strong evidence for this assertion. There is a demonstrable link between online community and participation, and cognitive development (Garrison 2006; Haavind 2007; McVay Lynch 2002; Palmer et al 2008; Richardson & Swan 2003; Rovai 2002; Shea 2006; Shea et al 2006; Thompson & MacDonald 2005), student retention (Brown 2001; Dawson 2006; Rovai 2002a; Shea et al 2005, 2006; Wegerif 1998), student satisfaction (Hopkins et al 2008), self-direction (Lee & Gibson 2003), sense of well-being (Rovai 2002a) and motivation (Finegold & Cooke 2006). There is also a link between alienation from community, and low persistence and achievement by students (Rovai & Wighting 2005), though it is not clear whether this alienation is a cause or a symptom.

Collison et al (2000) suggest that a healthy online community is one in which participants post regularly; honesty and collaboration are evident; participants moderate one another; and concern and support can be demonstrated. Building a successful community relies on the requirements of the course design, the instructor's facilitation skills, and the student context (their motivation and ability to participate; see Brown 2001). Class size is another variable of community (Brook & Oliver 2003), that directly influences the dynamics of cognitive presence. Larger groups tend to have a higher proportion of student-to-student messages; small groups are far more intimate in terms of student-instructor dialogue (Caspi et al 2003). While distance education classes can consist of hundreds of learners per instructor, Rovai (2000) suggests a student-instructor ratio of 30:1 as the maximum for establishing online community.

Unfortunately, the term 'community' is contestable. Garrison and Vaughan (2008:27) claim that 'community is not defined by physical presence'. If this claim is accepted, the potential for online community is settled. How, though, are we to understand the term 'community'? Ouzts (2006:286) defines a learning community as 'a group of students who have a sense of belonging; that is, they feel they matter to one another, possess shared expectations, and are committed to shared, educational goals'. To Wegerif (1998) it is a matter of students sensing that they have crossed a social threshold, feeling that they are insiders rather than outsiders. Online text appears to be a capable medium for establishing and sustaining interpersonal communications in education settings. Indeed, Rovai and Jordan (2004) provide evidence that the sense of community in a blended course (that is, one that combines face-to-face and online elements) can be greater than that perceived by students in either classroom or

distance environments. However, it is clear that online community is very different from face-to-face community. A student sample studied by Stodel et al (2006), for example, found that online learners missed the robustness and flow of face-to-face dialogue, its energy and improvisation, the sense of perceiving and being perceived by dialogue partners, getting to know others, and the familiarity of verbal conversation.

Preece and Maloney-Krichmar (2006:np) suggest that online community could be described in either interpersonal or functional ways. On the one hand, online community consists of camaraderie, empathy, and support; on the other, it is '*people who come together for a particular purpose, and who are guided by policies (including norms and rules) and supported by software*'. In formal education contexts, community has social and task-oriented aspects that cannot be neatly separated, and it is artificially bound in terms of its duration and membership. It is also easy to forget that, in formal education, any form of community is necessarily contrived. Wilson et al (2004) use the term 'bounded learning community', in recognition of the artificial, time-bound and often non-optional nature of community in structured learning environments. This artificiality naturally limits the extent to which an online community in a formal education setting can become a truly open community of learners. While personal disclosure is easier in online settings, and therefore relationships can tend to form more quickly and intimately than in real-life settings (Spitzberg 2006), such relationships may quickly reach the bounds of what virtual interaction can offer.

So there appear to be benefits from establishing a sense of online community for formal education, even though we use the term 'community' in a limited sense. But is community a *necessary* aspect of successful asynchronous online discourse? As a general rule, the higher the level of online interaction between students, the greater the sense of online community (Dawson 2006).

However, interaction is no guarantee that students are cognitively engaged in an educationally meaningful manner. Haavind (2007, see also Arbaugh 2007) cautions that while social community may be a necessary element of successful online collaboration, it is insufficient on its own. We must not take an established community as evidence of cognitive development.

Some students are peripheral members of an online class community, and do not actively participate. Such *lurkers* are criticised for their lack of contribution to community (Garrison 2006; Rovai 2000). Beaudoin's (2002) study found that, while lurkers were actively reading online forum posts and learning, they did not achieve the same course grades as participants. Reasons for non-participation range from a preference to read what others wrote, to an uncertainty of how to express themselves. Lurkers may not merely be reluctant to participate; their personal circumstances may make it difficult. 'Real life' has a remarkable ability to frustrate attempts to establish a social presence that contributes to an online community.

While there is evidence of a positive relationship between online community and student outcomes, some students perceive getting to know one another as a waste of time and a distraction from 'real learning'. Some students, such as this respondent in Hrastinski (2006:126), simply do not see the value of online community:

I didn't study at a distance to create relations to 20 others via the Internet. I think... that it was quite pointless to struggle to achieve some kind of solidarity and communication in the class. I think it should have been more individual.

We must also assimilate the evidence from studies such as that by Godwin et al (2008), who compared the outcomes of various distance education courses requiring different levels of asynchronous online discourse. The study found while the pass rate and passing grades tended to be higher in distance education courses with high levels of interaction, the overall *completion* rate tended to be lower. Whether or not online discourse was integrated within the course did not seem to make any difference. Additionally, students in courses with *fewer* requirements for interaction tended to be more satisfied with their study experience. While Godwin et al's (2008) findings were not statistically significant enough to be transferable, we should remember that distance education courses may work well without the additional burden (on both students and instructors) of engaging in online community, and that the lower level of community required for cooperative (as opposed to collaborative) interaction may be sufficient for effective higher education. In support of this suggestion, Baker (2003, in Garrison & Arbaugh 2007:168) found that the instructor's own immediacy 'was more predictive of affective and cognitive learning' than any sense of student community. Wu and Hiltz (2004:146) found that the instructor plays 'an essential role in promoting students' motivation, enjoyment and perceptions of learning online'. Moore (2002:61) agrees, stating that in CMC environments '[s]atisfaction is strongly linked to the learners' sense that the distant instructor has a social presence', particularly in the form of feedback.

In other words, an effective instructor makes a greater contribution to overall course outcomes than does any sense of community among the students themselves. Thompson and MacDonald (2005) found that students build the level of community that suits them. Given that the student experience of asynchronous online discourse is not one of satisfaction versus dissatisfaction but one of satisfaction versus ambivalence (Dziuban et al 2007), it seems that students will either participate in community or not, rather than participate begrudgingly. So, even with the best techniques, students themselves will determine the success or otherwise of online community.

In any course, social presence and online community are only useful if they help learning to happen. Community has a place in asynchronous online discourse, and many studies affirm that it is beneficial to education. However, the differences between establishing community for *cooperative* purposes and community for *collaborative* purposes are fundamental. Collaboration requires a higher sense of online community than does cooperation, so it is important to deliberately choose one or the other when you plan asynchronous online discourse. 'Too much' community may be a distraction to learning (Hopkins et al 2008). 'Too little' community may result in students adopting a cooperative approach in a course that was designed for collaborative interaction.

4.3.3 Cognitive presence: measuring the depth of discourse

In the Community of Inquiry framework, *cognitive presence* is the extent to which meaning can be constructed by participants through their communications. Garrison et al (2000) suggest that cognitive presence is made up of four categories, each of which can be discerned in online discussion posts.

1. *triggering event* – discourse relating to consideration of the problem, or an invitation to discourse
2. *exploration* – brainstorm-type discourse relating to ideas that are relevant to the problem or invitation
3. *integration* – tentative reflections contributing to a potential solution are offered, and various hypotheses are presented
4. *resolution* – hypotheses are evaluated.

In one study, Kanuka et al (2007) found that just over half of the messages in asynchronous online discourse fitted into one of these four stages (see Table 5 below). Overall, some 6 per cent of messages were related to the triggering event; 30 per cent to exploration, 15 per cent to integration, and a further 6 per cent or so to resolution. These proportions are roughly representative of another study by Garrison et al (2001).

	Garrison et al (2001)	Meyer (2003)	Kanuka et al (2007) ¹¹
Trigger	8%	18%	6%
Exploration	42%	51%	30%
Integration	13%	22%	15%
Resolution	4%	7%	6%
Other (includes social)	33%	3%	43%

Table 5 – Cognitive processing in online discourse (Hemphill & Hemphill, 2007)¹²

Exploration is typically the most significant category in terms of message volume (see Oriogun et al 2005). Meyer (2003) suggests that the volume of integrative and resolution-oriented posts shows that higher-order thinking and reflection is taking place in asynchronous online discourse. Though the proportion of messages in the integration and resolution categories is comparatively low, the results in Table 5 may reflect the undergraduate experience. In another study Meyer (2004) analysed the online discourse of doctoral students, and reported 32 per cent integration, 20 per cent resolution, and 3 per cent other (uncategorised).

While we can easily measure cognitive presence, it's not so easy to achieve. Of the three elements of the Community of Inquiry framework, cognitive presence is the most dependent. It is partly an outcome of social presence but, primarily, it depends on the effectiveness of teaching presence.

¹¹ Extrapolated from data provided.

¹² All results are rounded.

4.3.4 Teaching presence and good practice: challenges and variables

To a very large extent, success breeds success in asynchronous online discourse. Students tend to start enthusiastically (Zembylas 2008), and less-certain students are more likely to participate when they see the benefits of the online exchange. However, failure – in the form of low participation, poor disclosure, and the lack of a positive or useful norming of behaviour early in the course – will eventually reduce online discourse to silence. Asynchronous online discourse is far from a magic bullet. Sometimes asynchronous discourse may comprise ‘desiccated discussions ... lacking in joy, passion, flavour and urgency, and [which are] somewhat solipsistic, lacking in impulsive and spontaneous pressures’ (Kanuka et al 2007:267). Participation in asynchronous online discourse is often skewed by an active minority (Caspi et al 2003), ‘with unequal participation and of varying quality’ (de Bruyn 2004:78) because ‘participants with superior rhetorical skills ... dominate the debate’ (Potter 2004:189). Others may lack the general disposition and computer self-efficacy to participate (Spitzberg 2006). Sometimes, online discourse can also resemble ‘a document delivery system, rather than an engaging and caring learning community’ (Kanuka et al 2007:268). In other words, some students will use the discussion board to have their own say rather than engage in dialogue (Hopkins et al 2008). Subsequently, online discourse might only scratch the surface of the issues (Angeli et al 2003).

Further, asynchronous online discourse in formal education is inherently artificial. Time frames are usually limited; discourse is limited to members only; the subject is typically narrow and pre-defined. Online posts tend to be skim-read (Hewitt et al 2007), and longer messages are skimmed more quickly. Skimming activity increases in larger classes. One of Kay’s (2006) findings was that messages beyond the third in a thread receive less attention. B. Anderson (2004) questions the extent to which online discourse is democratic in terms of participation, based on issues of gender and race (see also Zembylas 2008). Jeong (2006) also found that messages from females tend to receive fewer replies unless their messages are stated as facts. Curtis and Lawson (2001) found that there is less ‘challenge and explain’ behaviour in online discussion than face-to-face discussion, indicating that messages may not always be sufficiently probed or understood before they are replied to. Other messages might be perceived as too complicated to respond to meaningfully, again discouraging further dialogue (Wegerif 1998).

Asynchronous online discourse is complex and demanding. Online discourse does not work merely because it is available. In any context, its success is highly conditional, and you must manage some significant problems and disadvantages. Evidence from multiple studies (Arbaugh 2007; Finegold & Cooke 2006; Fox & MacKeogh 2003; Garrison & Arbaugh 2007; Garrison & Cleveland-Innes 2005; Hammond 2005; Hopkins et al 2008; Lee & Gibson 2003; Spitzberg 2006; Swan & Shih 2005) points to three interdependent variables as being critical to the success of asynchronous online discourse.

These variables are:

1. *design*: the characteristics of the online discourse activities themselves
2. *facilitation*: the ability and dedication of the online instructor
3. *participants*: the willingness of students to participate.

Generally speaking, design and facilitation are the most malleable of the three variables, and these two variables comprise teaching presence. Even the third variable – participants – can be influenced (see Spitzberg's model in 'Theory of CMC Competence', section 4.3), so that students become more willing to participate over time. As students become more familiar with the technology, one another, and the challenges of adequately expressing themselves using text, their initial anxieties are reduced (Zembylas 2008). Buckner and Morss (1999) and Kear (2004) found that participation and learning could be improved in online discourse if students have an opportunity to get to know one another; they are clear about the task and what is expected of them; the amount of work expected and the timeframe it is expected within are realistic; and the constraints of the medium are respected (for example, they understand that online discourse is more suited to exploring debate than reaching consensus). These are design issues.

Further, there is significant evidence that excellent facilitation makes students more willing to participate. Rossman (1999), who reported on a significant ($n > 3000$) number of course evaluations, found that students clearly prefer online discourse.

Most of these preferences can be influenced by an instructor who understands and acknowledges these key points.

- Students appreciate prompt feedback that goes beyond 'nice job' or 'good response'. Such responses were viewed as betraying 'a disinterested or lazy faculty member' (1999:93). Students cannot get enough feedback from their instructors.
- Students appreciate their views being challenged by instructors, provided they are challenged constructively. They prefer private communications if the comments are negative.
- Students appreciate and value posts from other students as long as they are not late.
- If a student does not post because their ideas are already represented in the forum, they tend to feel guilty.
- Students prefer open and honest online discourse that is representative (that is, is not dominated by one or two participants).
- Students appreciate clear guidelines for course requirements.

Evidence from Finegold and Cooke (2006) confirms that students value feedback, encouragement, clearly defined tasks, progress reports, dispute resolution, and the correction of misconceptions from instructors. Effective teaching presence is therefore vital, and good practice in design and facilitation will improve student participation.

The next section of this e-primer will show you how to ‘lift your (instructors’) game’ in asynchronous online discourse through better design of online discourse activities. It also provides an overview of the skills required for online instruction.

4.4 Teaching presence in action

In the Community of Inquiry framework, Anderson et al (2001) state that ‘teaching presence’ consists of three elements:

1. *instructional design and organisation* of the course, which includes setting curriculum; designing methods of interaction; establishing time parameters; using the online medium effectively; and establishing netiquette
2. *facilitating discourse*, which includes identifying areas of agreement and disagreement; seeking to reach consensus and understanding; encouraging, acknowledging, or reinforcing student contributions; setting the climate for learning; drawing in participants and prompting discussion; and assessing the efficacy of the process
3. *direct instruction*, indicated by the instructor presenting content and questions; focusing the discussion on specific issues; summarising discussion; confirming understanding; diagnosing misconceptions; injecting knowledge from various sources; and responding to technical concerns.

Teaching presence, then, includes designing the parameters for online discourse; facilitating the discourse that students participate in; and instructing students as a subject expert.

Teaching presence is important, but that doesn’t mean educators must be continuously active, driving each online discussion. *Teaching* presence, remember, is different from *teacher* presence. Fox and MacKeogh (2003) and Lee and Gibson (2003) point out that the design of online activities (evidence of teaching presence) is key; activities can be designed in such a way that they encourage collaboration and higher-order thinking, while optimising the instructor’s direct involvement. Garrison (2006:30) notes that ‘[t]he teacher should be present but not the centre of the discourse’. Pelz (2004) goes further, suggesting ‘students do most of the work’ as a strategy. Having students leading discussion, finding and discussing resources, assisting one another, and even grading one another, can be considered effective expressions of ‘teaching presence’, provided the instructor works to establish the required degree of collaborative community.

The instructor’s expectations, the way they prepare the discussion activity and initial communications, and their ongoing facilitation skills, all contribute to an effective teaching presence.

4.4.1 Design elements: setting expectations and preparing opportunities for discourse

The purpose, learning objectives, assessment criteria, and the actual configuration of discourse tasks are clearly important elements of success (Hopkins et al 2008). You must make key decisions about expectations and requirements for online discourse well before your course actually starts. Thorpe (2008) recommends compulsory participation

and setting uncompromising expectations. Rovai (2007) observes that not all students are intrinsically motivated, so you should use external rewards. Not grading online discussion board use has resulted in more messages being directed to the instructor (Weisskirch & Milburn 2003), whereas mandatory (and graded) use generates more peer discussion and better cognitive presence.

Compulsory participation points to some sort of recognition of assessment. Rewarding student involvement in online discussion guides effort and reflects the importance of the activity. Because the reward tends to determine the outcomes, it follows that online discussion ought to serve a deliberate educational purpose – that it is linked to a course's learning objectives and requires students to engage meaningfully with course materials (Hopkins et al 2008; Oliver & Shaw 2003; Palmer et al 2008; Swan et al 2006).

Online discourse can be assessed directly or indirectly.

- *Direct assessment* involves allocating marks to online discussion. While it is possible to allocate direct marks within assessments, it is better practice to allocate a percentage as a dedicated mark (for example, 10 per cent of the total course grade rather than 10 per cent of each assignment mark).
- *Indirect assessment* can be facilitated in a variety of ways. You can ask students to refer to online posts in their written assessments. Or you can provide incomplete content for a particular topic (or particular aspect of a topic) and direct students to use the discussion forum collaboratively to investigate the topic and build upon one another's findings.

Whichever approach you use, it is important to clarify the expectations for online discourse, preferably with a marking rubric. Rubrics provide guidelines for improving interactivity as well as offering a way to evaluate and compare interactivity in different settings. Essentially, rubrics are guides to what is expected from the discourse. Evaluation rubrics and protocols (expectations as to number of posts required, their length and frequency) can increase the effectiveness of asynchronous online discourse (Gilbert & Dabbagh 2005; Schafer et al in Rovai 2007), provided any grades awarded are 'precise, targeted, and explicitly pointed at collaborative interaction' (Haavind, 2007:63). Examples of marking rubrics are included in Appendix A.

Some discussion forum tools allow users to rate one another's posts. Expecting students to use such a feature alongside a clear rubric for evaluation would be a convenient formative assessment option.

Evaluating each student can be a difficult task for an instructor unless the bulletin board system collates each individual's posts (as is possible in Moodle). Instructors might also expect students to reflect on their own overall posts as a final assessment; Murphy and Loveless (2005) describe how this approach encourages higher-order thinking and self-criticism. The principle of having students reflect on their number of posts, how they back up their claims, and their contribution to overall knowledge construction during the course is a promising one. Of course, such an approach needs to reward consistent interaction, otherwise it may encourage a last-minute rush from students trying to meet criteria just before the deadline.

The forums that you create will communicate your expectations to a certain degree. You can organise forums for different types of discussion.

I recommend the following forums:

- *Notices and instructor announcements* – a place for you to post messages of interest to all. This might be a one-way forum in which only the instructor can post messages.
- *Student café* – a place for students to say more or less what they want. You might choose the option of permitting anonymous messages in this forum.
- *Introductions* – where students introduce themselves and respond to one another's introductions.
- *Assessment discussion* – a place for students to ask questions and for you to provide assessment reminders, tips, and general feedback.

You might set up additional forums for each topic. The introductory notes in each forum should provide a clear outline of what sort of messages you expect. For example, you might introduce the 'Notices and lecturer announcements' forum as follows:

I will post announcements and notices of general interest in here. Please don't post any messages in this forum – post social messages in the café, assessment issues in the assessment discussion area, and topic posts in their relevant forums. I will make announcements here when the need arises.

While I have included a student café area in my recommended forums, McPherson and Nunes (2004:320) found that social spaces in online discourse can sometimes be a waste of time because 'mature, full-time professional, part-time students have neither the time nor the inclination to spend effort on non-essential and unrewarded tasks'. The student experience of having a cross-course social area in an asynchronous discussion space in McPherson and Nune's study was a rather sad one, with one student describing it as like 'sitting in a bar with no atmosphere drinking diet Tango and, just before you leave, jot a cryptic message to say you have been there on a post-it note and stick it on the fruit machine' (2004:319). Students will make of such forums what they will.

To a large extent, the way you design discussion activities will determine the level of cognitive presence in the course. Well-designed tasks can also enhance the sense of social presence and community within the course (Swan & Shih 2005), particularly if you require self-disclosure or personal experience in early discourse.

When you plan a discussion, be realistic, plan, and carefully consider the demands it places on students. MacDonald (2006) helpfully points out that the overall number of messages is the total of the number of students, multiplied by the number of conversation topics, and by the average number of messages posted by each student.

For example, 20 students participating in 3 activities over a week, posting on average about 4 messages each, will result in 240 messages, plus additional posts from the instructor. Clearly it is difficult to participate meaningfully in such a level of interaction. Ross et al (2004) found that students become very selective about interaction once messages become numerous, and will read only those that are well-written and

concise. Message management can be a major activity for students, and overwhelming discussion soon leads to poor representation and shortcuts. Students are particularly concerned about the time they need to spend on participation (Hammond & Wiriyapinit 2005). As suggested in E-Primer 3: *Designing for E-learning*, section 3.4.5), a well-constructed 200-word post may take a student up to an hour and a half to write.

The first principle for the design of online discourse activities, then, is to ensure that there are not too many. Because of delays in message preparation and response, asynchronous discussions require very careful construction and adequate time for responses (Wang & Woo 2007). You might need to plan more time for student reflection after the discussion (Wegerif 1998). I recommend 1 to 3 weeks for each activity, to prevent discourse becoming too complex. Students might perform a simple cooperative task over 1 week. However, for a large-scale collaborative discussion, you might allocate 2 weeks for trigger and exploration activities (see 'Cognitive presence: measuring the depth of discourse' section 4.3.2), with a final week dedicated to integration and resolution. Timeframe is one of the more important elements of discussion design. Jeong and Frazier (2008) found that rushed posts – added just before a deadline – hinder critical discourse, and they suggest multiple deadlines for initial posts and responses. If you take this approach, students may need a longer period of time for each discussion forum; however, it has the positive effect of encouraging meaningful interaction with others' ideas. Remember that setting deadlines for asynchronous discussion activities can effectively make such discussion time-dependent (Jeong & Frazier 2008).

Thorpe (2008) found that if a collaborative task is well defined, with clear, logical steps and realistic time frames, participants do not necessarily have to meet beforehand to successfully generate authentic disagreement and debate. If tasks are based on real-world conditions and issues, so much the better. Kanuka et al (2007) found that online discourse works best when it is well structured, roles and responsibilities are clearly defined, and students have to address one another's opinions. According to Clark (2001:121), a good topic is 'one that most students will have to research before submitting their text and one that may cause students to differ in opinion'. The way you introduce an online discussion is vital for the success of the interaction. If expectations are not clear, students will not know what they need to do. Inevitably, they will be reluctant to take part, or their shared ideas will not align with your goals.

According to (Salmon 2002), well-constructed online discussion activity would have the following characteristics.

- *Use an illustrative title.* The online discussion needs a descriptive 'label', similar to the subject entry of an email.
- *Provide a spark.* It's not enough to provide a topic. What is it about that topic that students need to explore? What is the 'hook' into that topic that will engage them?
- *Indicate the time or post limit.* This is a basic requirement. State clearly when the first post is due and when replies are due.
- *Make the required action clear.* How substantive should the post be? Do students need to mention a particular theorist or perspective? What should they emphasise? Clearly state any requirements you have beyond the norm. Consider

how you would brief a face-to-face group of students, and include similar detail for your online participants. In this part of the description you might also tell them about your own role in the discussion.

- *Encourage interaction.* Don't respond to every post, but from time to time you may wish to redirect the discussion or emphasise points that students have made. If you have time, it might be worthwhile to email non-responsive students.
- *Provide a summary or feedback at the end.* This step is vital for closure. Identify key themes and points, quoting student posts as often as possible. Relate these to your perspective as a subject expert, and conclude with further questions for consideration and reflection. At the end of your summary, declare the formal discussion closed.

Additional elements that must underpin the design of your discussion design include learning objectives, an idea of the sort of interaction that is intended, and a consideration of the likely size of the participating group (Strijbos et al, in Hopkins et al 2008:39). The learning objectives provide the purpose of the discussion activity and its fit with the overall outcomes of the course. Clear goals and expectations are a critical element of design (Garrison 2006).

If a task is to be expressly collaborative, you might also need to:

- ensure that each group has a fairly even mix of experience and ability
- delegate the tasks of coordinating the groups' activity and preparing the group's conclusions
- comment on the finished products, filling in any gaps, and correcting as needed; prepare a clear debrief, either on paper or posted in the course discussion forum; quote individual group members' work, and name the contributors
- set different tasks for different groups so that the class has wider coverage of the topic. You might also give the same topic to pairs of groups, so that comparisons between their ideas and conclusions can be made.

You might make early discussion activities in a course more structured and directly supported; later ones more open and student-directed (Wegerif 1998). Trufant (2003) suggests starting with non-threatening topics, and then moving into scenarios and topics that help to link course concepts with the real world.

Online discussion activities can vary greatly. Take care to design a task that requires students to engage in deep learning. Bradley et al (2008) found that brainstorming and discussion based on interpreting a reading of some sort had more potential for higher-order thinking than discussions that required students to choose between points of view, relating a reading of some sort to the course as a whole, developing a response to an issue, or responding to a scenario with justification. This study is significant because it demonstrates the influence of the question or discussion topic itself on engagement. Questions that form the basis of online discussion should be open-ended, requiring critical responses.

Trufant (2003:3) suggests that questions should:

- require students to go beyond the facts
- encourage students to recognise assumptions, implications, and consequences
- generate more questions, rather than closing avenues of inquiry
- hold students responsible for their views and conclusions
- encourage students to interact critically with the content and with each other.

Tasks can go beyond discussing questions. Rovai (2007:87) suggests the following types of discussions:

- *One-sentence summaries* – students select and articulate only the defining features of an idea.
- *Most important point* – students describe the most important point of a reading assignment and why it is important to them.
- *Muddiest point* – students identify the least understood point in a reading assignment.
- *Test questions and model answers* – students write plausible test questions and model answers for specified topics.
- *Self-confidence surveys* – students assess their self-confidence regarding specific skills.
- *Benefits analysis* – students describe how the skills learned in the course relate to their goals and interests in life.

Topic debates, for which you might put students in groups or role-play situations, provide another rich set of possibilities. Freeman and Capper (1999) demonstrate the success of an anonymous role simulation, in which the asynchronous nature of the online medium and the anonymous allocation of roles greatly enhanced the process. In collaborative investigations and topic debates, students must research a topic themselves and discuss their findings with one another. This strategy can be especially effective if research skills are an important student outcome. It is also important to consider how online discourse might suit any type of course. Nicholls and Philip (2001), for example, demonstrate how you can use an online forum to benefit discussion about elements of drama – a subject that may not always be naturally suited to online interaction. MacKnight (2000) adds buzz-groups (where two students discuss something then report back) as a way to promote critical thinking. Online debates can work extremely well, particularly if you design them so that students explore the grey areas that surround some issues.

Guest speakers can be particularly effective for student engagement in discussion forums, even if the visitor does not participate extensively (Hemphill & Hemphill 2007). Of course, the guest should be recognised as having a valuable contribution to make and, ideally, provide a presentation or in-depth introduction before participating. Using guests does not automatically lead to higher levels of thought in students (Kanuka 2005) unless the guests model it themselves (Hemphill & Hemphill, 2007).

Wang (2008) reports 8-10 participants as ideal for a task-oriented asynchronous online discussion, and 12-25 as a good number for building critical mass. Group sizes of 5 or

fewer can also be successful. Rovai (2007) proposes 10 as a good number, with 20 to 30 as a maximum group size. Caspi et al (2003:239) recommend larger groups, as this 'creates a greater potential for interaction, especially between and among learners'. Their recommendation makes sense in that their study was concerned with groups for whom discussion was not mandatory. Group sizes are best determined when you have considered the desired type of discourse (more for cooperative, less for collaborative situations) and participation (compulsory, or non-mandatory). The type of activity may also limit the number of participants – for example, sharing experiences might suit a larger number better than a role-play with a certain number of parts.

Here is an example of how you might present an online discussion.

Making motivational theory work

Entwistle (1998) distinguishes between three different motivational types: intrinsic, extrinsic, and achievement. In any particular group of students, you will have learners with diverse motivational characteristics. How, then, might Entwistle's types influence how you construct a course? In your *substantive* post, provide a practical example of how you might apply Entwistle's work, and provide a brief discussion of how Entwistle's types have informed your example.

Substantive post due: Friday 24 June, 9pm; about 200 words.

In your *first* reply to someone else's example (about 100 words), consider your own motivational characteristics and how you personally might respond to one of the practical examples given by another student. In your *subsequent* replies, enter into dialogue with the student you originally replied to, and with any students who have responded to your own practical example.

First reply due: Wednesday 29 June, 9pm.

Final replies due: Friday 1 July, 9pm.

I will provide a summary of key points on **Monday 4 July**.

You might also write a brief in a narrative form. Make sure you provide all of the important information shown in **bold** below.

By the end of this week (23rd March) you should have completed the topic 'Backdrop to the New Testament'. As you work through the material, **identify with one particular person, group, or section of the community of that time**. Maybe you see yourself as a young teenage girl, an old man, a Roman soldier, a Pharisee -- or perhaps you will put yourself in the shoes of someone eagerly awaiting the promised one who will save his people from oppression.

When you have chosen your identity, consider their fears, their hopes and their opinions.

How do they feel about living in an occupied country?
How do they feel about being controlled from Rome?
What other perspectives come to mind?

Once you have formulated your new identity, **reintroduce yourself** on the discussion board so that others may get a snapshot of the world through your eyes (use **at least 300 words** to provide your perspective). Once you have introduced yourself, other members of the group may inquire if they wish to find out a little more (please do so **by the end of the weekend, 25th March**). You may then have to consider areas of

life that you may have overlooked. (Note that responding to others' posts from this point is optional.)

This exercise will encourage you to appreciate the perspective of your identity living in Palestine somewhere between BC and AD. We will then be able to view the material in the course from a slightly different viewpoint to that of the 21st century. We also want to get comfortable with the idea of posting and responding to messages posted on the board.

Enjoy!

To summarise, a well-designed online discussion has:

- clear expectations for engagement, preferably through a rubric made available to participants
- clear guidelines as to what sort of message should be placed in which forum
- consideration of participants' workload for discussions
- thorough instructions, including an illustrative title, a spark, a time or post limit, clear guidelines for action, a strategy for engagement, and a commitment to feedback
- a progression of discussion activities, from those that are less threatening and highly supported, to those that have high stakes and are more interdependent
- activities that require higher-level engagement.

Now we'll look at how to facilitate asynchronous online discourse.

4.4.2 Facilitation elements: initial messages and ongoing engagement

Mason (in Kanuka et al 2002:163) states that 'excellence in tutoring online is fundamentally no different from the excellence in other forms of teaching: enthusiasm and involvement; intellectual perception and insight; ability to model an understanding of the subject matter'. Online instructors can (and ought to) communicate these characteristics at the start of the course. An instructor's online presence must be asserted at the beginning, and Thorpe (2008) also recommends requiring students to be involved with online interaction right from the start.

Communicating expectations at the start of a course is a useful way to influence student motivation, because it gives students important clues as to how they should engage with online discussion.

Hammond (2005:18-19) summarises much of the literature:

Learners should have knowledge, experience, and understanding of the benefits of group work; be confident in and have some level of proficiency in ICT; have access to ICT; not be able to easily meet face-to-face; be ready to critique the authority of the tutor; find that text-based communication suits preferred learning style [sic]; have proactively chosen to take part; be confident in contributing to public forums and ready to constructively critique other points of view; be proficient in language of [sic] the forum and fluent writers; and be aware of an information gap and eager to cross it.

If students are aware of the skills they must bring to the course; if they understand that they are expected to challenge the instructor and one another; if they know the standard of language required; if they know how their instructor is likely to engage with them

across the course, you have made your expectations clear. An initial message in the 'Notices and lecturer announcements' thread could communicate your expectations for online discourse, or you might post a message in a more general forum.

The following exemplar of how expectations might be provided is based on criteria from Levine (2002 in T. Anderson 2004:282-283):

- Discussion forums are **not** the best place to ask your lecturer questions that are not related to the course materials. If you want to ask a question or make a comment not related to class discussion, use email.
- Focus on the task set in the course materials, but feel free to add related thoughts and material, other readings, or questions that occur to you from the ongoing discussion.
- I expect you to post at least **one substantive message** for each discussion question, and **three reply messages** in response to other students. Your *substantive* postings should reflect an understanding of the course material.
- Your *reply* postings should advance the class's negotiation of ideas and meanings about the material; that is, your contributions should go beyond a 'ditto'. Here are some ways to further the discussion:
 - Express opinions or observations in depth, and support them with more than personal opinion.
 - Make a connection between the current discussion and previous discussions, a personal experience, or concepts from the readings.
 - Comment on, or ask for, clarification of another student's statement.
 - Synthesise other students' responses.
 - Pose a substantive question that aims to further the group's understanding.
- When evaluating others' posts, cultivate a critical approach. What are the assumptions behind what they have said? What have they not said that would be of interest? What might you add to the point being made?
- Before adding your post, check it carefully for correct spelling and grammar. Make sure that it can't be read in a way that others might consider offensive. Read it aloud, and consider whether it might be misunderstood. I recommend that you draft all messages in a word processor¹³ before you copy and paste them into the discussion forum.
- Your instructor will read all posts but will not necessarily respond to every one. Typically an instructor will contribute to an online discussion only at the start (to let you know that it is starting) and at the end (to draw together everyone's ideas and reveal key themes and questions), though some will also share their insights during the discussion.
- The number of messages posted may seem overwhelming at times. Log in at least twice a week, and learn to skim the messages. Prioritise your attention.

¹³ Note: Some word processors include formatting code, which can distort the appearance of text copied and pasted into discussion board posts.

I have already mentioned making a marking rubric available to students. You should also encourage students not to fall behind in online discourse, as it can be difficult to catch up (see Wegerif 1998). You might also encourage them to view their posts as works in progress rather than final submissions (Trufant 2003). Ideally, you will include your expectations in the course materials, and not just online. You might also negotiate expectations with the class as a whole.

As the instructor, you should introduce yourself in the 'Introductions' forum or direct students to your personal profile.

Experience shows that the level of personal detail we provide in online introductions serves as a model for students. If your introduction is brief, informal and to the point, students will provide something similar (Rossman 1999). The importance of having students post a personal introduction in cases of asynchronous online discourse is attested to by Schrum and Hong (2002), who see it as key to a sense of community and active participation. An introduction might also consist of an icebreaker of some sort. Accurate spelling and grammar are absolutely vital in this first message, because it sets the tone for future messages. You can also attach a digital photo (it needn't be a professional portrait – a family or group photo will do).

Initially, students might not be confident online participants, and might need support to develop as writers for discussion or bulletin boards, and to manage multiple discussion threads (MacDonald 2006). A round of introductory messages at the start of a course can work well here, particularly in the first year of an extended programme. Introductory messages give you and your students a valuable opportunity to develop your social presence, and you can also use them to build student confidence with online tools and their peers. Adding an early formative exercise means you can give students feedback on their ability to express themselves in ways that meet course expectations.

Your initial communications should model a regular and friendly online discourse. The characteristic that makes interpersonal communication between friends so enjoyable – an underlying tone of warmth, acceptance, and encouragement – is the key to effective online communication. Successful online tutoring requires a genuine interest in student learning and an appreciation of the power of encouragement.

Haughey and Anderson (1998:108) put it this way:

The moderator has to set a tone that is open and welcoming, warm and encouraging. These electronic social leadership skills have to be matched with instructional skills that enable the moderator to state the focus of the discussion clearly and concisely, keep the group on task, reduce the impact of those who would dominate the computer screen and encourage students who are hesitant to participate.

Of course, this style of communication is relevant during the course as well as at the start.

Morris et al (2005) suggest that there are three different types of online instructor.

1. Online *monitors* make few online posts, mainly at the beginning of the course; they keep up to date with student contributions, but seldom contribute themselves.

2. Online *facilitators* release questions, occasionally provide feedback to individuals, and foster a climate of collaboration.
3. Online *teachers* are highly visible in online discussions, interacting with individual students in online dialogue (and through private email).

We must differentiate here between those instructors who call themselves online facilitators and those who, by Morris et al's (2005) reckoning, demonstrate it. The differentiation between *monitors*, *facilitators*, and *teachers* is conceptually useful, but it is difficult to evaluate in practice. Instructors might adopt a style based on their belief that students should take responsibility for their own learning (a constructivist perspective), a role that Morris et al assume of the *facilitator*. However, a *monitor* might simply be unaware of the importance of an online presence. An online *teacher* might also post to individuals because they want their students to benefit from a more informed perspective. That said, Morris et al found that facilitators tended to have a more balanced sense of their overall role, and had higher instances of student posts. Rather than encourage a particular type of instructor as optimal, we should consider the framework on which we can build a balanced perspective.

Trufant (2003:2-3) states that a good facilitator:

- clearly communicates the purpose and expectations of the discussion
- makes postings clear, concise, and informal
- coordinates logistics and acts as a neutral member of the group
- focuses the energy of the group on the topic and intervenes only when the discussion veers off-course
- suggests alternative methods and procedures without judging conclusions
- protects participants from intimidation and keeps individuals from dominating the exchange
- encourages participation and constructive feedback
- summarises student positions and reinforces conclusions as they evolve
- integrates the online discussion into in-class work (if any).

Further, a good facilitator encourages students to:

- ask probing questions
- listen to each other
- take turns and share work
- help each other learn
- respect each other's ideas
- build on each other's ideas
- construct conclusions
- think in new ways.

Thorpe (2008) suggests a strongly supportive role that intervenes only when things start to go off track (though instructors are still expected to be always supportive and flexible).

Garrison and Arbaugh (2007:164) add that:

...facilitating discourse requires the instructor to review and comment upon student responses, raise questions and make observations to move discussions in a desired direction, keep discussion moving efficiently, draw out inactive students, and limit the activities of dominating posters when they become detrimental to the learning of the group.

The need to apply judgement is implicit. Clegg and Heap (2006:np) suggest that '[s]uccessful facilitators combine critical judgements about the content of contributions with clear decisions about the intervention process'. The key questions are 'whether or not to intervene, when to intervene..., what type of intervention should be made and whether the intervention is best targeted at the individual or the whole peer group'. To discern when and how to intervene, you need experience and an appreciation of the learners' own contexts.¹⁴ Spitzberg's (2006) proposal that interpersonal skills online are a function of attentiveness, composure, coordination, and expressiveness therefore becomes important. These four factors form a good basis for managing your online presence.

1. *Attentiveness* – the extent to which the facilitator is up with the discussion, and displays this to others.
2. *Composure* – the deliberate avoidance of cues of uncertainty (linguistic qualifiers), and the adoption of an assertive tone.
3. *Coordination* – managing the number of messages, their length, how quickly they are responded to, and their overall relevance.
4. *Expressiveness* – the use of humour, emotion, and self-disclosure.

An optimal online presence is deliberately managed. Instructors who post regularly tend to be judged as more enthusiastic than those who do not. However, Mazzolini and Maddison (2003) found that too many messages from the instructor can actually hinder student interaction; frequent posts by the instructor do not necessarily lead to more student engagement, and can actually reduce the length of discussion threads. In a different study, though, the opposite was found (Gilbert & Dabbagh, 2005). Rovai (2007:82) points out the delicate nature of this balance:

[a] challenge for the online instructor is establishing and maintaining social presence to show that student postings are read without the instructor becoming the centre of all discussions... [this is] more an art than a science as instructor communication is influenced by a number of factors, including how well the instructor and students are acquainted, level of classroom community, and the content area.

Much of the art, Rovai (2007) adds, has to do with the instructor valuing each student's contribution, having a positive attitude toward student experience, and wanting to bring out the best in them. You need to keep a tension, a balance, and a restrained

14 Clegg and Heap (2006) suggest a tennis analogy (instructors might choose to respond once they have determined the student's message to be an *ace*, *net*, or *fault*), and the extent to which (and how) other learners have responded.

enthusiasm for successful online instruction, but evidence suggests that you should err on the side of enthusiastic participation rather than absenteeism. Garrison and Arbaugh (2007) talk of the critical differences between facilitation and direction, moderating and shaping. Usually students simply need to know that you are interested – you don't need to dominate. However, there will certainly be times when direct instruction is necessary.

4.4.3 Developing a written style

The medium of asynchronous online discourse is usually the typed word – and the tone, style, and timeliness of typed words reveals something about their author. An educator's online presence is, to a large extent, determined by what, how, and when messages are typed. Online discourse is not like spoken or conventional written language (Crystal, 2006), and has an interpersonal nature that is neither immediate nor formal. It is also limited by its text-only nature. Potter (2004:190) remarks that '[m]isreading of messages is common: humour is mistaken for criticism; constructive criticism may be misinterpreted as insult; body language, facial expressions, and variations of voice intonation are simply unavailable'. The lack of non-verbal cues in online discourse makes written style particularly important. As an instructor, you should be particularly sensitive to your writing style, as 'subtle forms of communicative distortion and coercion [can] prevent equal participation, self fulfilment and emancipation of individual students' (Cecez-Kecmanovic & Webb 2000:81).

What you write

What you write should encourage students to think deeply. Yang et al (2005) demonstrated the potential for Socratic (probing) questions in online discourse to encourage critical thinking by students. Thoughtful questions can invoke reflection and lead to extended discourse. In their study, Yang et al (2005) also found that the level of critical thinking did not drop when patterns of Socratic dialogue were discontinued. Students, it seemed, had learned the level of dialogue required, and approached future conversations critically once the pattern had been set. Heckman and Annabi (2005), however, caution that using Socratic questions requires a linear approach to online discussion. They observed that students tend not to post messages until close to a deadline, so a string of true Socratic questions requires a more deliberate and regular set of posting behaviour from students. (Appendix B lists some Socratic questions.)

A powerful way for you to maintain your online presence and weave student discussion together is by writing a weekly update in a discussion forum (Beaudin 1999; Rossman 1999). Following the initial period of interaction, you can use regular summary posts as your primary way of interacting with students through online discourse.

A weekly summary serves multiple purposes. It:

- assures students that all discussion is being followed
- enables you to quickly highlight threads and significant posts
- draws students' attention to their peers' key ideas and significant contributions
- enables further reflection on the week's discussion
- provides closure to the discussion

- permits you to add your own expertise and informed perspective in the context of what students have discussed
- reduces your need to be directly involved throughout the week
- enables students to quickly revise the main outcomes of the discussion
- reminds students of notices and imminent deadlines.

During the actual discussion period, instructors ought to contribute at least 5 to 10 per cent of all messages (no more than 20 per cent) and, importantly, know when to say nothing!

Messages posted by facilitators might:

- offer further challenges to students, either individually or to the class as a whole
- encourage further dialogue, particularly with key ideas that other students have ignored
- provide hints for exploring avenues that have not been considered
- bring a discussion back to the point if it goes off track
- respond to urgent messages or direct requests.

Further, instructors ought to email individual students from time to time to acknowledge contributions, provide feedback, and encourage further participation (particularly from lurkers).

How you write

How you write is also important; however, it is given scant attention in literature. Typos suggest you might have been in a hurry or are not concerned about how your message is perceived. Your vocabulary gives clues as to your education. Potter (2004) demonstrates the effect of basic devices such as sentence structure, subtle parallelism, and symmetry on the power of a message. Jeong (2005) found that messages including qualifiers (*but, if, I think, often, probably*) and intensifiers (*always, never, only, very*), tend not to be responded to as often as messages that contain neither (though intensifiers were found to be more effective than qualifiers). In one study, Rovai (2003) analysed online style using categories of friendly, impression giving, relaxed, contentious, attentive, precise, animated, dramatic, open, and dominant. His findings showed a strong correlation between the participant's personality type according to Myers Briggs, and how they were perceived by other students in asynchronous online discourse. Personality is communicated indirectly through the typed text of asynchronous online discourse! While Rovai's (2003) study indicated that no particular style is better than any other, he also remarks that 'online instructors... should design and facilitate online courses in ways that support friendly, open, and precise communicators' (2003, p.362). Relationally supportive language by instructors in online environments has been demonstrated to add positively to the student experience (Baker 2004).

Consider the difference between the following two statements, and what they might suggest about the instructor who makes them in an online forum:

You're not trying. The ideas you've expressed here are inadequate and, frankly, disappointing. If this level of activity is the norm for you, you will fail.

Although the message is direct, the tone is harsh.

Here's a more positive alternative:

Gavin, I'm afraid your contribution here is not enough, given the guidelines mentioned in your course outline (250 words, with references cited in full). This is disappointing, particularly since others have provided more substance and I would have expected you to follow their lead! Is Do you lack the time, or did you overlook the requirements?

Unless you follow the guidelines more closely, your performance in this course will be compromised.

The writer of the first message could be perceived as judgemental, abrupt, impatient, and not entertaining the possibility that the student *had*, in fact, tried. The second message reads as though it has been prepared by someone who is patient, and interested in student success and further dialogue.

Use the following guidelines to establish an effective online style:

- Full sentences and paragraphs work better than abridged ones, as they imply a full conversation and a commitment to the discourse.
- Choose message subject lines carefully and deliberately.
- Provide detail whenever you can, but avoid being verbose.
- Assume the best of the participants in all situations. Leaping to conclusions makes further conversation difficult; if you assume the best your response will leave the door open for further dialogue.
- Use exclamation marks(!), question marks (?) ellipses (...) and dashes (-) to communicate particular moods, intentions, and emphasis. Use exclamation marks (sparingly) to communicate excitement! Use question marks to emphasise a point that you want your reader to consider carefully: I wonder if you agree? Ellipses, well... they indicate that you have thought a bit about things and are being reflective. Use dashes – like this – to break up a sentence in a way that suggests you are actively thinking about the issues.
- Use emoticons (see 'Online discourse in context', section 4.1) to help convey a sense of feeling or attitude.
- Read, re-read, and check each message again before you post it. Ask yourself if you have really explained yourself well, and what the message's tone and style might say about you. Be very careful if the situation is delicate.
- Read each message as it arrives. If it requires an urgent response, write one straight away. If not, wait until the end of the week and incorporate your main points into a summary post.
- Use students' names (particularly in summary posts). They add to the personal nature of your communications and ensure you acknowledge the writer.

Check your general style. Each message you post should be:

- *respectful* – acknowledge that students are exploring meaning, even when they seem to post what they consider to be a factual conclusion to a matter. Assume that students post because they want to learn, and that they don't intend to offend others.
- *accurate* – check not only your content, but your spelling and grammar. Good online tutors model precise writing. Draft messages in a word processor that checks spelling and grammar if you struggle in those areas!
- *concise* – get straight to the point, don't waffle! Unfortunately it is easy for an online discussion or bulletin board to become a lecture platform. Avoid this at all costs.
- *facilitative* – assist learning by gently nudging students to find the answers themselves.

Consider the sample messages included in Appendix C for some ideas on how an online instructor might respond in different situations,.

When you write

Finally, don't overlook *when* you contribute a message. Reply as soon as possible if a student posts a direct question about course dynamics, or a content question that you might not expect other students to be able to answer. Also reply promptly if a post is potentially offensive or confusing. Respond to introductory posts quickly and informally. Later, as the course progresses, focus on quality rather than quantity. Such time frames communicate something about you as the instructor, and therefore contribute to your online presence. While you don't want to be the hub of each conversation, you will still give the impression that you are an interested, attentive, responsive, and encouraging participant.

4.4.4 Managing the facilitation workload

Designing and facilitating asynchronous online discourse is a lot of work. MacDonald (2006) notes the importance of managing your own time when you moderate online discourse. Experience testifies that online moderation will easily absorb all the time you are prepared to give and, on the other hand, that it is easy to ignore moderation tasks completely. By managing your time, you will avoid the twin risks of neglect and over-attention. Setting boundaries for moderation might include having regular windows of activity, having a clear policy for response to emails (though this will probably never be as fast as students expect), and sharing instructional responsibilities with someone else. Another approach is to design online discussion activities so that your own role is optimised. To Clark (2001), successful facilitation has students interacting *with each other*, providing clear expectations and rules for engagement, providing positive feedback to students, and carefully designing discussion topics and projects. In Thorpe's (2008) case, the role of the online instructor was minimal because the discussions themselves were well designed. As a result, student participation was high and the outcomes were educationally valuable.

Here are some guidelines for managing participation:

- At the start of the course, expect to spend a lot of time responding to introductory messages and student inquiries. It is important to demonstrate your friendliness and responsiveness during this critical time.
- In your message introducing formal discussions, tell students that you will read posts regularly during the week but will not necessarily respond to all of them. You will focus on providing an in-depth summary of the discussions' main points and issues that have been raised.
- At the end of each formal discussion, plan a block of time to prepare your summary.
- As well as the time you need for the summary posts, set aside about 1 hour every 2 days for online discussion, to respond to any urgent messages, to keep up to date with student discussions, and to get an early indication of whether you need to intervene.
- Respond to formal discussion posts during a discussion only if you are asked to, or feel you need to.
- Prioritise your involvement. Messages that are priorities for maintaining an online presence are those that:
 - are posted by a first-time user
 - are contentious, or might be perceived as contentious
 - initiate thought-provoking issues that should be explored further by the whole class
 - are off topic and could stifle further on-topic conversation.
 - are at the end of a long or complex discussion (in which case you might prepare a summary of that discussion)
 - raise important issues that others might need encouragement to respond to.

In general, activity throughout a course will require four distinct stages of activity.

1. Before the course:
 - set up your personal profile (that is, that part of your LMS account where you are able to introduce yourself)
 - clearly define all discussion activities
 - establish expectations and a marking rubric.
2. At the beginning of the course:
 - prepare and post a personal introduction
 - respond to student introductions
 - draw attention to matters of course dynamics, discuss expectations, and include hints and tips for contributing to online discussion (perhaps using a rubric)
 - confirm your own commitment to respond to students
 - introduce the first discussion activity.

3. During the course:
 - check the discussion forum at least once every 2 days, allowing sufficient time for appropriate engagement
 - wait before you respond to student posts – giving others time to post first
 - respond quickly to any post that requires your personal attention, even if you just acknowledge them for later follow-up
 - use private emails to encourage and follow up those who might be lagging, or who perhaps need to change their online approach
 - weave key themes together and keep momentum going with Socratic questions or other suitable techniques
 - prepare discussion summaries at key times or at regular intervals.
4. At the end of the course:
 - initiate closing interventions
 - prepare a farewell post and reflection.

These stages of activity will ensure a strong start and maintain a viable and involved online presence.

4.5 Summary – maximising online discourse

Online discourse has considerable potential in both distance and on-campus contexts. Synchronous tools have reached a maturity that makes them extremely viable for live presentations and collaboration. Asynchronous discourse, particularly through text, is one of the tools that has made e-learning an important feature of 21st century education. It is highly accessible, reflective, and conducive to collaboratively exploring ideas. However, online discourse requires careful planning and dedicated facilitation.

There has been a significant degree of primary research on the subject of asynchronous online discourse. While it is not easy to generalise from the diverse and sometimes contradictory findings of such studies, a few themes are very clear.

1. Asynchronous online discourse must be well designed to be successful. Any topic or matter for discussion must be carefully constructed, and your expectations must be realistic and clearly stated.
2. Online instructors must work hard to achieve the correct balance of online presence. Facilitation must be dedicated, deliberate, and enthusiastic right across the timeframe of a course within the tension of intervening too much, and too little.
3. The success of asynchronous online discourse is also affected by the characteristics and circumstances of the students in the class. This doesn't mean that design and facilitation can't provide encouragement and reward to participants; it does mean that online participation can't be fully controlled or pre-determined.

We can follow a logical progression in online discourse, from introductions to socialisation, from sharing ideas and perspectives to rigorous debate. Activities for

effective online facilitation can also progress through clear stages of pre-course, early course, mid-course, and end of course. However, it is much more important that the instructor expresses their personality – their enthusiasm, fluency, warmth, encouragement, or otherwise – in asynchronous online forums. Who the instructor *is* underpins all of the techniques and observations in the literature. Expressing your personality is both the challenge and opportunity of online discourse, where the exchange of ideas and perspectives takes place among the genuine humanity of its participants.

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Appendix A: Rubrics for online discourse

Various rubrics for asynchronous online discourse exist. Some are concerned with evaluating student performance; others serve different purposes.

For evaluating student performance, T. Anderson (2004) cites a rubric from Dabbagh (2000), applied on a weekly basis.

Criterion	Excellent	Good	Average	Poor
Timely discussion contributions	5-6 postings well distributed throughout the week	4-6 postings distributed throughout the week	3-6 postings somewhat distributed	2-6 not distributed throughout the week
Responsiveness to discussion and demonstration of knowledge and understanding gained from assigned reading	Very clear that readings were understood and incorporated well into responses	Readings were understood and incorporated into responses	Postings have questionable relationship to reading material	Not evident that readings were understood and/or not incorporated into discussion
Adherence to online protocols	All online protocols followed	1 online protocol not adhered to	2-3 online protocols not adhered to	4 or more online protocols not adhered to
Points	9-10	8	6-7	5 or less

Table A1 – Rubric from T. Anderson (2004)

Pelz (2004:43) uses a two-stage process: grading each individual post (content and subject), and then counting the points across all posts for each student (see Table A2). Initially, each post is given a point value:

Points	Interpretation	Grading criteria
4	Excellent (A)	The comment is accurate, original, relevant, teaches us something new, and is well written. Four point comments add substantial teaching presence to the course, and stimulate additional thought about the issue under discussion.
3	Above Average (B)	The comment lacks at least one of the above qualities, but is above average in quality. A three point comment makes a significant contribution to our understanding of the issue being discussed.
2	Average (C)	The comment lacks two or three of the required qualities. Comments which are based upon personal opinion or personal experience often fall within this category.
1	Minimal (D)	The comment presents little or no new information. However, one point comments may provide important social presence and contribute to a collegial atmosphere.
0	Unacceptable (F)	The comment adds no value to the discussion.
No penalty	Excellent Subject	The subject field conveys the main point of the comment. The reader clearly understands the main point of the comment before reading it.
1 point penalty	Minimal Subject	The subject provides key word(s) only. The reader knows the general area that the comment deals with.
2 point penalty	Subject field is unacceptable	The subject field provides little or no information about the comment.

Table A2– Rubric from Pelz (2004)

The rubric in Table A2 particularly encourages good use of the subject field (termed an ‘advance organiser’ by Pelz) for each message. No extra marks are given for good subject titles, but poor subject titles are penalised. In Pelz’s (2004) system the number of posts yields a final grade as follows:

Discussion Grade	Number of quality points received in the discussion
A	31-39
B	25-30
C	12-24
D	6-11
F	0-5

Table A3 – Rubric marking guide from Pelz (2004)

Pelz (2004) grades each discussion in the course, so students who ‘save up’ their overall contribution for a discussion late in the course are disadvantaged. This grading encourages regular participation.

Table A4 shows a scale developed by Ho and Swan (2007) to rate student posts. It has the makings of an effective rubric. The ‘Cooperative Principle Rating Scale’ measures message quantity, quality, relevance, and manner.

	Quantity	Quality	Relevance	Manner
3	The amount of information is sufficient to clearly establish the purpose of the posting.	The posting is a new contribution (e.g., novelty, originality), reflective of the student's opinions and is supported by accurate evidence/examples.	The posting is on the same topic as both the conference and the previous posting.	The posting is logically organized and has no spelling, punctuation, or grammatical errors; meaning of the posting is clearly presented
2	There is slightly too much or too little information; however, the purpose of the posting is still reasonably clear.	(a) The posting is a new contribution that reflects the student's opinions; however, evidence/ examples are not provided to support claims or (b) The posting reflects the student's opinions and accurate evidence/ examples are provided.	The posting is on the same topic as the conference, but not the previous posting.	The posting is adequately organized; if any errors are found, they are so minor that the meaning is still reasonably clear.
1	There is too much or too little information, such that the purpose of the posting is occasionally obscured.	(a) The posting is representative of the student's opinions, yet evidence/examples are not provided to support claims or (b) The posting is largely a re-statement of prior postings but incorporates a minor new contribution.	The posting is on the same topic as any of the previous postings, but not the conference.	The technical aspect of the posting (e.g., organization, spelling, grammar) has several problems, such that the meaning is occasionally obscured.
0	There is so much or so little information that the purpose of the posting is not understood.	(a) The main idea in the posting is a re-statement of prior postings and no new contribution is present; or (b) Inaccurate evidence/examples are provided.	The posting is irrelevant to both the conference topic and previous postings.	The posting is poorly organised and/or it has serious errors in sentence structure or usage, thus the posting is hard to understand.

Table A4 – Framework of analysis used by Ho and Swan (2007)

In their analysis using the scale, Ho and Swan (2007) found that a message's *quality* was the best indicator of whether others would respond. Messages with low levels of *manner* were less likely to be responded to. Participants were more likely to respond to shorter messages of about 130 words. A message's *quality* was highly related to its relevance. However, grading each individual post is not for the faint hearted! A more pragmatic way to assign a grade based on a rubric might be to sample each student's messages at the end of the course and assign the grade based on your overall

impression. You might also use the rubric as the basis for formative feedback on student performance earlier in the course. An alternative strategy might be to have students grade one another's individual posts throughout the course.

A slightly different approach suggested by Oriogun (2003; also Oriogun et al 2005) could be applied alongside a rubric or used as the basis for one. Oriogun suggests the SQUAD (Suggestion, Question, Unclassified, Answer, Delivery) framework for inviting students to adopt a conscious purpose for their posts. Each purpose indicates a particular level of engagement, as in Table A5 below.

Purpose for post	Characteristic	Implied level of learning engagement
Suggestion	An idea presented for others to accept.	High
Question	A request for a response or more information.	Low
Unclassified	A message that is not in the other four categories.	Very Low
Answer	A reply to a question or other stimulus.	Nominal
Delivery	A piece of the 'final product' is offered.	Very High

Table A5 – SQUAD classifications from Oriogun (2003)

'Purpose' might form the basis for a rubric. While Oriogun's (2003) approach is best suited to problem-based discourse, having students choose the purpose for their contribution before they prepare their post led to focused discussion and high levels of learning engagement. In a later study, Han and Hill (2006) suggested the categories of goal setting, reflection (representing individual understanding), connection, original reformulation, and re-direction (the likes of Oriogun's 'question' category would be subsumed across Han and Hill's).

Finally, Roblyer and Weincke (2003) base their rubric on how interaction takes place across five elements (see Table A6). It is a useful way to measure the interactive potential across courses.

Scale (see points at end of table)	Element #1: Social/Rapport-Building Designs for Interaction	Element #2: Instructional Designs for Interaction	Element #3: Interactivity of Technology Resources	Element #4: Evidence of Learner Engagement	Element #5: Evidence of Instructor Engagement
Low interactive qualities (1 point each)	The instructor does not encourage students to get to know one another on a personal basis. Activities do not require social interaction or are limited to brief introductions at the beginning of the course.	Instructional activities do not require two-way interaction between instructor and students; they call for one-way delivery of information (e.g., instructor lectures, text delivery) and student products based on the information.	Fax, Web pages, or other technology resource allows one-way delivery of information (text and/or graphics).	By end of course, most students (50%–75%) are <i>replying to</i> messages from the instructor but only when required; messages are sometimes unresponsive to topics and tend to be either brief or wordy and rambling.	Instructor responds only randomly to student queries; responses usually take more than 48 hours; feedback is brief and provides little analysis of student work or suggestions for improvement.
Minimum interactive qualities (2 points each)	In addition to brief introductions, the instructor requires one other exchange of personal information among students (e.g., written bio of personal background and experiences).	Instructional activities require students to communicate with the instructor on an individual basis only (e.g., asking/ responding to instructor questions).	E-mail, Listserv, conference/ bulletin board, or other technology resource allows two-way, asynchronous exchanges of information (text and graphics).	By end of course, most students (50%–75%) are <i>replying to</i> messages from the instructor and other students, both when required and on a voluntary basis; replies are usually responsive to topics but often are either brief or wordy and rambling.	Instructor responds to most student queries; responses usually are within 48 hours; feedback sometimes offers some analysis of student work and suggestions for improvement.
Moderate interactive qualities (3 points each)	In addition to providing for exchanges of personal information among students, the instructor provides at least one other in-class activity designed to increase communication and social rapport among students.	In addition to requiring students to communicate with the instructor, instructional activities require students to communicate with one another (e.g., discussions in pairs or small groups).	In addition to technologies used for two-way asynchronous exchanges of information, chat room or other technology allows synchronous exchanges of primarily written information.	By end of course, all or nearly all students (90%–100%) are <i>replying to</i> messages from the instructor and other students, both when required and voluntarily; replies are always responsive to topics but sometimes are either brief or wordy and rambling.	Instructor responds to all student queries; responses usually are within 48 hours; feedback usually offers some analysis of student work and suggestions for improvement.

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Above-average interactive qualities (4 points each)	In addition to providing for exchanges of personal information among students and encouraging communication and social interaction, the instructor also interacts with students on a social/personal basis.	In addition to requiring students to communicate with the instructor, instructional activities require students to develop products by working together cooperatively (e.g., in pairs or small groups) and sharing feedback.	In addition to technologies used for two-way synchronous and asynchronous exchanges of written information, additional technologies (e.g., teleconferencing) allow one-way visual and two-way voice communications between instructor and students.	By end of course, most students (50%–75%) are <i>both replying to and initiating</i> messages when required and voluntarily; messages are detailed and responsive to topics and usually reflect an effort to communicate well.	Instructor responds to all student queries; responses usually are prompt (i.e., within 24 hours); feedback always offers detailed analysis of student work and suggestions for improvement.
High level of interactive qualities (5 points each)	In addition to providing for exchanges of information and encouraging student–student and instructor–student interaction, the instructor provides ongoing course structures designed to promote social rapport among students and instructor.	In addition to requiring students to communicate with the instructor, instructional activities require students to develop products by working together cooperatively (e.g., in pairs or small groups) and share results and feedback with other groups in the class.	In addition to technologies to allow two-way exchanges of text information, visual technologies such as two-way video or video-conferencing technologies allow synchronous voice and visual communications between instructor and students and among students.	By end of course, all or nearly all students (90%–100%) are <i>both replying to and initiating messages</i> , both when required and voluntarily; messages are detailed, responsive to topics, and are well-developed communications.	Instructor responds to all student queries; responses are always prompt (i.e., within 24 hours); feedback always offers detailed analysis of student work and suggestions for improvement, along with additional hints and information to supplement learning.

Table A6 – Rubric from Roblyer and Weincke (2003)

Further rubrics of note include those in Baron and Keller (2003), Rovai (2007), and Swan et al (2006). The rubrics and suggestions above may be less suitable for, say, an online role-play where an effective and realistic portrayal of the role is important. You might also need to assess group and collaborative outcomes; this would require further thought on an assessment scheme (Swan et al 2006).

Appendix B: Socratic questions

Socratic questions provide an effective and efficient way to encourage deeper reflection from students. MacKnight (2000:40, citing Park 1990), lists the following Socratic questioning prompts:

Questions for clarification:

- What do you mean by...?
- What is your main point?
- How does ... relate to ...?
- Could you put it another way?
- What do you think is the main issue here?
- Let me see if I understand you: Do you mean ... or ...?
- Jane, could you summarise in your own words what Richard has said?
- Richard, is that what you meant?
- Could you give me an example?
- Would this be an example: ...?
- Could you explain that further?

Questions about the initial question or issue:

- How can we find out?
- What does this question assume?
- Would ... have put the question differently?
- Can we break this question down at all?
- Does this question lead to other questions or issues?

Questions that probe assumptions:

- What are you assuming?
- What could we assume instead?
- You seem to be assuming Do I understand you correctly?
- How would you justify taking this for granted?
- Is this always the case? Why do you think that assumption holds here?

Questions that probe reasons and evidence:

- What would be an example?
- Could you explain your reasons to us?
- Are those reasons adequate?
- Do you have evidence for that?
- How could we find out if that is true?

Questions that probe origin or source questions:

- Where did you get this idea?
- Have you been influenced by media?

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- What caused you to feel this way?

Questions that probe implications and consequences:

- What are you implying by that?
- What effect would that have?
- What is an alternative?
- If this is the case, then what else must be true?

Questions about viewpoints or perspectives:

- How would other groups of people respond? Why?
- How could you answer the objection that ... would make?
- Can anyone see this another way?
- What would someone who disagrees say?

Such questions are invaluable as the basis for structured discussion. They are also a handy reference for facilitating asynchronous online discourse, as any of them can be used to further a discussion and prompt students toward deeper thinking.

Appendix C: Sample asynchronous messages

While not intended as exemplars, these samples provide some ideas for the appropriate style and tone for online interaction.

Student message	Suggested response
‘Hi everyone. This is my first time in something like this, so here goes! I look forward to meeting you all and discussing things.’	Hello [student name], welcome aboard! You will find online discussion to be an interesting addition to your learning. I’m [name], your online tutor...
‘In response to John’s message, you obviously haven’t thought about it enough. Any fool can see that your theory will not work.’	Hi [student name], you have been a little harsh here. Reviewing John’s message, I can see that his thoughts do need to be explored a little more... perhaps you might provide a more helpful critique of John’s theory?... <i>If a student responds like this, also send them an email to let them know that their tone was inappropriate. You definitely need to intervene in a case like this.</i>
‘...and these are my thoughts. What do you all think?’	Some possible responses: Hi [student name], some interesting issues here. Have you read (article) by [author]? It would probably help you to explore the issue further. Basically, [author] believes that... Hi [student name], you’ve certainly raised some interesting issues. What do others think about this? This is a good topic to explore! [Student name] has given us a good start into the issue of... Hi [student name], that reminds me of a time when... <i>Nothing... but you may want to use one of the three messages above if no other student responds after a time.</i>
‘...and so I just don’t know what’s going on or what it all means.’	Hi [student name], I’m sorry that you’re having some difficulty with the course content. Can I suggest that you... <i>Follow up with a personal email referring the student to additional support as required.</i>

Here are some other possibilities:

<p><i>When a student is clearly yet honestly incorrect in one of their postings.</i></p>	<p>Hi [student name]! I'm having trouble agreeing with you. It's just that the evidence doesn't seem to support your conclusion. Have you considered... [present main points of argument]. It is possible though that you are already aware of these arguments. If so, I would be interested to hear more about why you believe what you stated below. Of course, it is always possible that I didn't really understand your message properly!</p> <p><i>Avoid a blunt disagreement. Encourage the student reconsider their own position in light of the arguments that you present.</i></p>
<p><i>When a student openly rebukes another. Sometimes this might seem appropriate, but some people have trouble getting to grips with text-only communication – it is possible that the student being rebuked was simply misunderstood! This to the student who rebuked another.</i></p>	<p>Hello [student name]... that seemed a bit heavy! I'm wondering if [other student] really intended the message to say what it seemed to. Sometimes the messages we type don't really say what we want them to.</p> <p><i>Follow up with both students by email. You might find that other students will spring to the defence of another regardless, and that the situation will eventually sort itself out.</i></p>
<p><i>When a student provokes or mocks another.</i></p>	<p><i>Remove the post from the forum, and send the student an email outlining the action you have taken and why it was taken. Remind the student of the need for courtesy in online discourse.</i></p>
<p><i>When a student is contributing too much too frequently/ provides too much copied and pasted information from websites or other documents</i></p>	<p><i>Handle this by email. Tell the student that they are probably overwhelming others with the volume of information, and encourage them to edit their posts. You might even offer to do this for them until they get the hang of it!</i></p>

Table C1 – Sample asynchronous online discourse messages

Additional examples of encouragement.¹⁵

- Thanks for speaking up!
- Does anyone have a contrasting view...?
- You've led me to wonder if [other student] has adequately considered...
- Can others clarify this point...?
- Would it be worth my adding further examples...?

¹⁵ With thanks to Cathy Gunn, University of Auckland.