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## Effective Use of VLEs: Computer-Mediated Conferencing

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# Features of CMC

Getting to know your local VLE resources through use, practicing with colleagues and engaging in familiarisation sessions with students before using communication tools 'for real' in the support of learning, makes enormous sense. Some 'warm-up' activities are suggested in the 'getting used to it' section. Meantime it is worth flagging four key features of CMC support of teaching and learning, each with its own positive, negative or problematic aspects, to think about in the context of your own course development:

- the asynchronous nature of any exchange
- the text-based form of the individual contributions
- the potential permanence of the resulting record
- the facility to impose specific topic headings to structure discussion.

## Asynchronicity

The exchange involves participants contributing 'turns' to the debate at different times and often from very different places. This has implications for the pace and rhythm of the communication. Whilst it gives opportunity for composition and reflection on response to another's contribution, it can impede the sort of spontaneity that might be desirable in an exchange of ideas. The time spent crafting a response can seem wasted when, on re-entering the discourse, further messages have appeared either refuting or developing the idea, perhaps even using your own intended content ideas.

This experience in itself, however, can be positive if it supports a more equitable exchange of developing information and drafts, acknowledging similarity of ideas as a feature rather than feeling it to be a bug. Interaction can then take these forward, through argument and development.

## Text as a communication medium

Discussing an issue through the exclusive medium of text brings authoring demands that are different to those experienced by speakers in an oral debate. For many novices, using the written word to sustain a discussion is an unusual experience. Course participants may bring varying expectations of how to manage their learning communications in this way.

In particular, the lack of 'non verbal' cues such as intonation, expression, gesture etc may prove demanding for inexperienced users. It may be difficult to mend misunderstandings that arise from using written language carelessly. To some extent self-correction becomes automatic as people gain more experience with the medium but some of your students may need warning about the effort needed to communicate conversationally, and appropriately, in text.

See <http://www.windweaver.com/internet.com> for more information.

Experience is the best tutor, as a group learns to find its own common language(s) for development and crafting of ideas, as well as (if required) formally presenting them for peer review.

## Permanence of the communication record

What is written down (as opposed to spoken) is more readily preserved and made to seem permanent. The computer-based archive that defines a text conference can be visited and revisited, by members of the learning group, 'privileged outsiders' or, in the case of an open forum, anyone with access to the online address.

This can clearly be an advantage, both for revision and for 'vicarious learning'. Your students can review and develop their own and their colleagues' learning, as well as using the archive as a

reference resource. Interesting options for 'crafting' an archive for such use are possible.

However, if editing permissions are not held by the whole participant group, then this 'fixing' and lasting accessibility of messages can be unwelcome to some participants. In particular, it may cultivate feelings of self-consciousness or vulnerability, and impede communication by some of your students.

## Communicative structures

Finally, most text conferencing technologies invite an explicit structuring of texts or discussion threads, by use of headings and a 'reply-to' facility. Such organisational structure is less typical of much informal spoken discussion and debate. Your students may feel constrained by such discipline and yet without it may not actually be able to allow useful structure to emerge. 'I am not sure whether to post this here, in the cafe, or in the plenary' is becoming a common phrase among online learners!

You may find it useful to agree and set some ground rules for interaction, and familiarise your students with the functions and the value of retaining topic headings for theme interaction, 'cafe' areas for social exchange, 'plenary' areas for cross-group course communication etc. Most VLE resources support this variety; the degree of 'fit for purpose' uptake will differ between your different groups of students.

## Advantages and Disadvantages

You might like to return to this (non-inclusive) listing of advantages and disadvantages of CMC for reflection, after familiarising yourself with the CMC tools available to you.

### Advantages

- time and place independence
- no need to travel to the place of learning
- time lapse between messages allows for reflection
- speakers of other languages have added time to read and compose answers
- questions can be asked without waiting for a 'turn'
- it allows all students to have a voice without the need to fight for 'airtime', as in a face-to-face situation
- the lack of visual cues provides participants with a more equal footing
- many to many interaction may enhance peer learning
- answers to questions can be seen by all – and discussed.
- discussion is potentially richer than in a face-to-face classroom setting
- messages are archived centrally providing a database of interactions which can be revisited
- the process of learning becomes more visible to learners and tutors.

### Disadvantages

- communication takes place via written messages so learners with poor writing skills may be at a disadvantage
- paralinguistic cues (facial expression, intonation, gesture, body orientation) as to a speaker's intention are not available, except through combinations of keystrokes (emoticons) or the use of typeface emphasis (italics, bold, capital letters)
- time gaps within exchanges may affect the pace and rhythm of communications leading to a possible loss in textual coherence
- the medium is socially opaque; participants may not know who or how many people they may be addressing

- the normal repair strategies of face-to-face communication are not available and misunderstandings may be harder to overcome
- context and reference of messages may be unclear and misunderstandings may occur
- loss of spontaneity and quick-thinking and response type of debate / discussion.

Following the next page link below will take you to some suggestions as to how to apply this to your practice. First time users should find this particularly helpful.

Reference: Higgison, Carol & Harris, Rachel (2002). [Online tutoring: the OTiS experience](#) from the OTis website. Accessed 23.03.04

## Theoretical Frameworks

This section discusses some of the research that forms the basis for our current practice on CMC.

Online conferences can be seen as evolving spaces, living organisms co-constructed by teachers and learners as they move through them (Turner, 2001). Burge (1995) uses the metaphor of 'weaving-loom'. The focus is on the creativity, multiplicity and growth characteristic of constructivist learning theory, which holds that there are many ways to structure the world, and many meanings or perspectives for any event or concept (Duffy and Jonassen: 1992).

In asynchronous CMC, thinking is done 'interactively and iteratively, as in cross-country skiing across the intellectual landscape' (Burge, op. cit. p.155). Mason (1991) suggests that the tutor should play an active role in scaffolding experiences for learners working in the medium by weaving together the main points and suggesting further directions of study. Weaving is thus an open ended and challenging intervention as opposed to the closed and final intervention of summarising.

The claim is that in conferencing, participants may learn as much from one another as from course material or from the tutor, through a process of offering up ideas and having them criticised or expanded. Knowledge construction occurs when participants explore issues, take positions, discuss their positions in an argumentative format and reflect on and re-evaluate their positions. (Jonassen, 1995).

Several models of interaction towards knowledge construction within CMC TBC (text-based conferencing) have been proposed. Gunawardena *et al* (1997) offer a five phase model of sharing and comparing information; discovery and exploration; negotiation of meaning and co-construction of knowledge; testing and revision of ideas, leading to awareness of newly constructed knowledge.

'If knowledge construction is the task, then the sharing of different perspectives through debate and dialogue is, within a social constructivist framework, a precondition for it but does not simply constitute it. Getting to the point of actually constructing new knowledge (new to individuals and maybe new in the public domain) requires skilled, sustained, purposive and directed analytic and creative conceptual communication practices' (Edwards, 2002).

At issue are the learning interactions afforded between the learner and the content materials, between learner and learner, and between learner and tutor. Interaction between learner(s) and the mediating technology should not be, but often is, a factor for concern. Also important, surely, is conceptual change – interaction 'within the learner' of ideas and understandings as an outcome of what she or he takes into a 'learning encounter'.

What fosters collaborative learning? On or off-line, an environment that supports the construction of 'shared understandings' (Crook 1997) and the development of individual conceptual change through group interaction. Also, I would say, time and space to reflect, to interact and to reflect again. Of key importance is mutual access to essential information and to a common record.

Psychological research in compulsory and post-compulsory education provides us with models of both the character and function of 'productive' communication within learning environments (Howe et al 1992, Howe et al 2000, McAteer et al 2000, 2002).

### **Socio cognitive conflict**

This framework derives from the work of Piaget (1932), Vygotsky (1978) and their followers, since expanded via empirical research on interaction and learning (Azmitia &Perlmutter, 1989; Cazden, 1988; Howe, Tolmie, Duchak-Tanner, &Rattray, 2000) At its core are three basic processes: socio-cognitive conflict, expert guidance and social management.

**Example:** *Piaget proposed that whilst learning was a matter of individual cognitive adaptation to the world, there might be an important role for discussion between peers. In particular, where there was disagreement over expectation or interpretation of some event, this would cause as much conceptual conflict as actually experiencing events that departed from expectation. In both instances, this conflict would provoke a process of reflection and conflict reduction. Children would attempt to find improved conceptualisations that accounted for the apparent discrepancies. In this way, learning would take place.*

Subsequent work by Doise and Mugny (1984) suggested that this process of 're-equilibration' might not require post-event reflection. It could occur through joint attempts to construct new conceptualisations at the point of disagreement. More recent work indicates that both processes occur (Howe, Tolmie, Anderson &Mackenzie, 1992a; Howe, Tolmie &Rodgers, 1992b; Williams &Tolmie, 2000). Furthermore, factors such as age, familiarity with subject matter, friendship, etc are significant. Basically, the more familiar participants are with resolving conflict in given circumstances, the more likely they are to negotiate some improved agreement 'on the spot'.

### **Expert Guidance**

According to Piaget, conflict and discussion of this productive kind can only occur among peers. When there is an imbalance of status, the less expert individual simply defers to the person with more expertise. Vygotsky (1978), however, proposed that under these circumstances, a different type of learning dialogue occurs within the zone of proximal development.

Vygotsky theorised that learners could perform at a higher level when working with more expert others who help direct activity. Learning thus occurs via the appropriation and internalisation of the 'moves' initially performed under guidance. Bruner (1985) and Wood (1986) suggest that this might take place through a process of scaffolding or contingent support and recent research confirms the existence and impact of this kind of 'tutor-ly' dialogue (Howe et al, 2000). These behaviours can equally be typical of learners, of course, particularly in adult on-line learning contexts such as those described in this work.

### **Social management**

One further strand of behaviour in co-operative learning contexts, noted as important by socio-cultural, activity, and situated learning theorists (e.g. Crook, 1994; Leont'ev 1981, Engestrom, 1987; Wenger, 1998) relates to what might be called the 'social glue' of interaction. This includes strategies employed in managing and maintaining learning community activity. At the simplest level, this can be reduced to 'chaining' behaviour: interactional turns aimed at specifying what should happen when, and who is responsible for this. At a more sophisticated level, this might involve managing the process of uncovering and resolving conflicts, without provoking outright hostility.

These behaviours have been less researched than those relating to socio-cognitive conflict and expert guidance, but appear to be highly sensitive predictors of learning outcomes. For instance, overmuch routine chaining can lead to negative outcomes (Tolmie et al, 2000). At the more

sophisticated level, interactions aimed at generating shared community views of activities, especially at an early stage, appear crucial to the success of collaborative outcomes (Lewis, 1997). There is good evidence to suggest context influences upon the incidence and effectiveness of these sorts of interaction, depending for example on subject discipline, the make-up of the learning community, or the nature of the communication medium in use.

## Starting to Use CMC

Using CMC in learning and teaching may not come naturally to even those students and tutors who are 'browser literate' and for whom email has long been a comfortable resource. A sense of novelty predominates, more exciting than familiarity, but a lot less comfortable.

Both research and practice experience indicates that CMC skills develop best through tasks or activities which are familiar, meaningful and relevant to our learning needs. It is through such tasks and activities that your students (and possibly yourself) lacking experience within a particular learning environment can be drawn into confident and regular usage, gaining sufficient understanding of how that environment operates to explore new and productive ways of using it.

We do improve with practice and the aim here is to suggest some activities which should familiarise you, your colleagues and perhaps your students, in the use of computer mediated communication.

In familiarising yourself with the technology, you should concentrate in the first instance on carrying out activities that are familiar, and building up experience of how to do this using the resources to hand. Some pointers on starting to use the technology are given below.

Some form of local CMC system guide sheet for the use of VLE resources in your own institution may be available to allow you to establish log-on permissions, to check ways of using options and features and to identify useful resources before beginning. Check this with your service provider and/or educational development unit.

Establish a group – colleagues in the same institution may be sensible, unless there are common resources (VLE, version, server access etc) across institutions which allow freedom of inter-access.

Set a time frame for each activity, and agree this between yourselves.

### **Activity One:**

1. Each member of the group composes and posts an informal message to the conference, giving their name and department, then your reasons for engaging this learning activity at this time.
2. Each of you responds to at least one of the contributions made by colleagues. Perhaps you might agree, or comment on, someone's reasons for taking the module where these concur or contrast with your own.

### **Activity Two:**

Each member of the group thinks back over the issues raised in the introductory sub-section – the four key issues of asynchronicity, text format, permanence and structure, and the listing of advantages and disadvantages of CMC given there.

1. From what each of you know of the range of tutorial activities you engage for the support of learning in your own learning environment. What concerns, potential worries, might there be for realising these in a VLE? What, on the other hand, might work well – and why?

Select one or two issues and put them to the group for discussion.

- ◆ For example, participation is a known concern – some conferences attract little activity by the student group. If it is important for their learning that they do contribute, how can they be encouraged?
  - ◆ Another problem can be the student who dominates the conference – possibly with good work, but which might daunt less confident students, or irritate others. How to support the group development without thwarting that of the student?
  - ◆ Abuse of the system can be a worry, though it is found less frequently than might be feared – how to deal with the rogue contributor who may be using offensive language, spreading rumours, challenging staff?
2. Looking at the issues raised by your colleagues (which may or may not concur with your own, or with those suggested above), what solutions can you suggest? Spend a bit of time in discussion, responding to messages or putting new topics up.

Once you are all comfortable with writing and sending, each member of the group undertakes the next activity:

### **Activity Three:**

The context checklist template below can be used to organise your information (though there is no need to stick to it absolutely). Use this information to post a message about a course that you teach, support, or plan, for which CMC might enhance your learner support provision. This template is also available to download as a [Word document](#).

Subject Discipline

Course title

Course level

Who are the students?

Where are they studying?

Why are they studying

Available technological resources

Other course activities

Other course resources

**Purpose of CMC for this context:**

**Particular concerns or points of interest:**

Comment, question and respond to others' context messages if you wish to, then leave it for review in the light of practice experience?

This might be a good point at which to review information available from the 'Useful Links and References' section.

## **Roles and Competencies**

Given the range of purposes and contexts for group online tutorial classes, suggesting generic roles and competencies for tutors is problematic. Shifts between 'sage on the stage', 'guide on the side' and 'friend to the end' will be required depending upon the nature and level of your student group. Something across all three stances may be called for when supporting adult life-long learners and continuing professional development (CPD) groups.

That said, the list below is drawn from work with a project group spanning three UK and two mainland Europe institutions, as part of a European Commission Framework 5 programme: E–Quality in E–Learning (EQUEL). Any one student class online may demand several, perhaps all, of these roles from their tutor:

- Designer: sometimes of the whole course or course module, sometimes simply of the 'lesson' itself. Identifying and implementing the pedagogies, the teaching and learning activities and the tasks to be done by the learners.
- Content facilitator/Resource provider: sometimes as subject expert, sometimes as interpreter and guide through the concepts for study as expressed in the course materials; identifying and locating, developing and producing further resources to provide 'just in case' or 'just in time' learning support for the development of course–related concepts and skills.
- Metacognition facilitator: supporting reflection on learning activities and outcomes, study skills development: giving feedback, arguing, agreeing, challenging.
- Process facilitator: supporting learning strategies, study skills, time management, helping the learners to help themselves.
- Collaboration/communication facilitator: encouraging participation and showing ways of participating by example, engaging in a non–directive way to support good interaction between the learners to take the learning forward.
- Advisor/counsellor: providing pastoral support, acting as doorway to institutional or local support systems.
- Assessor (formative and summative): giving feedback on task achievement and performance, supporting assignment development, marking assignments, examining.
- Technologist: guiding early users, fielding problems, being first–post support with technologies and tools for learning.
- Manager/administrator: keeping records, setting calendars, booking spaces, general course management.
- Researcher: the line between the reflective practitioner and the action researcher is often thin.
- Co–learner: importantly, and often, the role of the tutor is not 'sage on the stage' or even 'guide on the side', but genuinely 'friend to the end' of the course, walking with the learner–participants and learning alongside them.

One aspect of your role will be common across the range of contexts: a primary purpose to support learning and to that end a small checklist of general features probably apply as well to the virtual as to the face–to–face environment:

- a climate of acceptance and respect for one another across both similarities and differences in the group
- openness of communication
- listening being valued as much as talking
- everyone taking responsibility for their own learning and for their own behaviour
- the development of clear processes for making decisions
- problems and conflicts being faced openly and constructively
- clarity in the setting (and agreeing) of tasks and activities
- everyone's contributions being acknowledged and valued.

Adapted from Stanford, 1990

See ['e–tutor readings'](#) for a summary of papers that deal with issues directly related to different e–tutoring roles: learning, learner management, learner experience, tutor perspectives, teaching and learning contexts and e–tutoring experiences.

See ['practitioner enquiries'](#) for summaries of the work of some of the foremost practitioners in CMC.

# Implementing CMC

You may have a variety of reasons for introducing CMC resources for students on their courses. These could be pragmatic – distributed class, need for common 'workspace', availability of adequate technological resources, mixed timetable demands across a student group – or pedagogical, offering perceived benefits for student learning through 'virtual' written discussion.

Critical factors for success are the integration of the communication resource within the programme, and its relevance to programme objectives which should be clearly understood and agreed by all concerned. Whether, and how, discussion topics and task activities relate to course outcomes and procedures influence the ways in which your learners use the resource. If online communication skills are themselves a learning outcome, then feedback on performance is critical. It may be, however, that the value gained by your students from the resource will differ for active and passive participants and you will need to acknowledge and respect this.

Practical issues are important. Individual participants, your students and yourself, need easy access to the resource whether working through local area networks, or a modem at home. The resource functions and navigation should be transparent and intuitive – the effort to communicate should be towards expression of ideas rather than mastery of technology. Taking space to familiarise the learning group with the software is sensible, though it is important that the tasks set to achieve this are usefully related to their social needs within the learning context of the resource.

Other issues relevant to general educational provision apply particularly for CMC. Learning support and access for physically and socially disadvantaged groups, ethics of practice, copyright and plagiarism, privacy, confidentiality and data protection need to be considered in line with national and institutional policy and the special constraints of the online context. Guidelines for various levels of learner and case illustrations from a range of learning contexts can be accessed and reviewed through the resources section.

## ***Broad tips for implementation:***

- Allow space, time and relevant resources for familiarisation and grounding the group.
- A getting-to-know you session can be a good way in, sharing experience, motivations, worries. If possible, face-to-face then hands-on, if not then make this the first online exercise.
- If the students would like to, provide a 'photo-space'.
- As soon as is sensible, engage tasks round the learning content and intended outcomes of the course.
- Share purpose, agree rules and roles, and review these as the course continues.
- Evaluate process and outcomes against plans.

# Measuring Practice and Change

A recent study (MacDonald & McAteer 2003) looked at tutor use of media within both distance and campus-based learning environments. All participating tutors recorded learning support as opposed to direct teaching interventions during key periods within a single module block or lecture unit within the courses for which they had tutorial responsibility. Intervention purpose (administrative, pastoral, conceptual support, skills development, assignment feedback, etc) was logged against media used (email, face-to-face, telephone, e-conference, paper-based).

Intervention function	Medium used								
	Contacts with group				Contacts with individuals				
	bulletin board	letter	face-to-face	CMC forum	phone	face-to-face	email	letter	other

Administration or management									
Encouragement or advising									
Reinforcement of concepts									
Assignment preparation									
Assignment feedback									
Study processes									
Other									

An adaptation of MacDonald and McAteer's logging instrument is shown here. You might find it useful to make your own record of practice over a current period of your teaching, doing the same with the following year's cohort to check changes with technology availability and use. You can download the above table as a [word document](#) for your use (opens in a new window).

The study showed that face-to-face, written and email interaction featured most strongly across all campus based and distance environments but, where VLE tools were provided, use of Computer Mediated Conferencing (CMC) increased. Feedback from study participants raised a host of concerns about good practice in its use.

## Planning Activities for Purpose

The broad examples of categories and purposes of use illustrated here are not exclusive, there is inevitable overlap. Success depends on many interactive factors, and will obviously be influenced by purpose.

Context information about the student group is important. Who they are, what their subject and information technology experience has been before coming into the course, where they might be at the times when they are studying e.g. at home (study, bedroom, kitchen), at work (shared office, temporary classroom, own workspace) and when they might be studying (after the kids are in bed, in between teaching and project meetings) is critical for you to have an understanding of your students' resource and support needs. Such knowledge does not always help to predict participation, but it can help to explain participation patterns.

Whether or not the technology and technological support available to them is adequate, i.e. accessible on demand, easy to use to the point of being invisible, and lends itself to the tasks in hand is another obvious factor influencing motivation to participate.

Most important is why they are taking the course – interest, professional development, company requirement, scholarship etc.. Their reasons may or may not closely match your reasons for providing it, and inevitably your reasons for the particular provisions you make – teaching strategies, learning tasks, support resources – may not be clear to them, or agreed with even if understood.

The critical thing here, as in traditional classroom environments, is to ground learning community relationships and task activities in a shared understanding of learning outcomes and agreed pathways to their achievement.

Categories of Activity	Strategies for engagement
<i>Questions and Answers</i>	Experience suggests that tutor-student or student-student

Sharing information, building up a knowledge archive	question/answer sessions can be valuable for developing 'why' or 'how' knowledge. It can also help with the refining of questions. Management and role responsibilities here, of course, depend on learner level, available resources and depth of issues to be covered.
<i>Group activities</i> Team building, getting used to working together online	Too large a range of possibilities here for truly generic advice but – small numbers work best (4–6), purpose–relevant tasks should be set, based on existing knowledge/skills for developing into the new environment. Time should be allowed for familiarisation, without pressure. The point, and the goal, of activities should be understood/agreed across the group(s). Role/tasks distribution should also be agreed and understood – decisions here on choice criteria, allocation responsibility.
<i>Debates</i> Analytical, communication, persuasion skills development, course concept cover	Adapting traditional rules – e.g. 'position statement' prepared, proposer and opposer identified, perhaps support team allocation to 'provide evidence' or 'support arguments'. Time deadlines established, form of debate itself agreed, judgement criteria (and roles) established. Resources for debate information should be available and accessible!
<i>Master class</i> Access to subject expert	This can be a good way for students to take their ideas further and get useful expert feedback, but can be a rather daunting experience – on both sides. The 'guest expert' might need a 'lead-in' and one or two students might be encouraged to seed the discussion with (genuine but not too esoteric!) questions or comments. It could be that the expert starts the discussion with a prepared paper, or it could be that she or he rounds off the 'open floor' by summarising and drawing issues into a report paper. Whether, and which, other resources might be provided depends on topic and practicality, but it may be appropriate to provide links to other papers, illustrations, etc.
<i>Cooperative/Collaborative Project work</i> Product development, conceptual or concrete – broadening perspectives, expanding experience, developing subject knowledge and skills, group work skills.	Again too great a potential range of need and context for generic guidelines, but many activities may combine, sequentially or together, for success. Grounding – clarifying and sharing objectives and rationales. Brainstorming – generating and exploring solutions. Task allocation/sharing – taking and giving responsibility, group awareness. Self–peer evaluation/assessment. Critical reflection, revision, change.
<i>Tutorials</i> One to one, one to many – supporting lectures/assignments/ individual study	Generally these precede, or follow, class activities such as labs, field trips, lectures. A major issue here could be spontaneity – sessions should be as freely interactive as possible, with all participants at their ease, and resources (lecture notes, assignment papers, whatever) to hand for common discussion. The first session for a new group could be deliberately set up as 'practice' with provided, but relevant, items for discussion and perhaps ending with a 'focus session' on the experience itself, and ways of improving it.
<i>Seminars</i> Presentation, discussion, peer critiquing skills. Conceptual development	With a different agenda, ground rules and practice need to be agreed – probably on the basis of group experience, though with reference to guidelines if these are appropriate. Whilst there may be a necessary formality, a relaxed atmosphere should be encouraged, and contrasts of presentational style. Availability of common resources is essential and, importantly, any preparatory work should have been done by all concerned!

<p><i>Discussion forums</i>  Special interest groups.  Separating out for study, bring back to topic group. Following individual course interests/objectives in company with peers – extending general knowledge</p>	<p>'Ownership' and freedom of speech need attention, if the desire is to allow open discussion of agreed issues. Students are likely to develop their own rules and codes of practice, and management of these, if left the space to do so. If teaching and support staff are present, it is a good idea if that is on an equal basis.</p>
<p><i>Review groups</i>  Critical skills, subject knowledge development</p>	<p>These can be very good ways of covering a lot of subject ground – content, issues, readings, performance. A key aspect is the pre-task activity of identifying sources and agreeing criteria for review/assessment. Different disciplines will inform quite different patterns of activity.</p>

*Adapted from McAteer et al 2001, see also McAteer & Harris 2002*

## Assessing e-Learning Interaction

We know that the methods by which we assess our students strongly influences what they learn, and how. It is also claimed by many, as commonsense knowledge, that students are less likely to engage in any demanding course-work activity that does not carry some weighting for summative assessment.

Another commonsense understanding in education today, better grounded through research as well as practice experience, states that it is good for students to learn together – that group work is good for learning.

If collaboration in its own right is valued as a learning support, then it is understandable that teachers seek ways of involving students in group discussion activities, online or face-to-face. Even if not participating, students say (and evidence supports them) that they learn a great deal by reading others' comments and responses.

In a collaborative learning environment, what is the role and limit of vicarious learning? At what point do we say that the level of contribution is so minimal as not to be sufficient or acceptable? Is all participation the same, and is participation always a good thing? What criteria can we apply to help define the nature and extent of participation that is necessary for us to be able to say that 'collaborative learning is occurring'?

One critical point for discussion, raised frequently in the e-learning context where often the conference or discussion forum is the only means for student interaction, is whether or not participation itself should be assessed.

If contributions should count for assessment, what weighting should they receive within the overall course mark, and what criteria can be defined for grading? This is more difficult to decide on than it may seem at first sight.

The critical issues are those of the learning purpose of the group work, a shared and relevant set of assessment criteria (for teachers and for learners) and the quality of feedback – whether given by teacher or peers.

One major issue for assessing CMC activity, or group behaviour in other learning environments, formatively and summatively, is the learning purpose of such activity, and how that purpose can be measured through study of the activity itself.

If one element for assessment is the development of appropriate communication skills within on–line learning environments, then those skills must be developed through use and feedback, and actual contribution to on–line task activities and discussions could (should?) contribute to any grade or mark awarded for module outcomes. Decisions as to the value of individual contributions might not be easily made!

One solution could be to weight assessment grades for 'contribution' in terms of:

- presence – just 'being there',
- interaction – responding and seeking feedback,
- transaction – sharing/exchanging useful information and resources and, perhaps,
- transformation where ideas and understanding clearly develop as a function of interaction and transaction?

The usefulness of this rule of thumb is limited unless all concerned agree on a sensible and achievable set of outcome criteria, and agree on what constitutes evidence of meeting them. Which communication skills are to be developed? Sympathy, support, encouragement, objectivity, criticality, equity? A bundle of behaviours would surely combine to promote, or thwart, a 'success' for the group working space? To what extent can (should) we ask the students to take responsibility for assessing, and grading, contributions to conferences?

Some people find that putting thoughts, ideas, and understandings together and posting to the conference, whether they receive feedback or not, is itself very useful for learning. Others gain confidence, and understand the benefit, from seeing the productions of others – whether they interact or not. This is not necessarily to be derogated – lurking is neither anti–social nor dishonest! People learn in different ways and ideally can take what they need from a range of course resources – reading and reviewing, practising, testing, arguing, drafting and reflecting alone or together.

If on the other hand the aim of the conference is to engage and support peer group discussion because it is believed that people learn best together and the intended learning outcomes relate to subject discipline knowledge and understanding, assessed entirely by performance (essay, practical task, exam paper, workplace development) outside of the conference space itself, then assessment of communicative performance within it becomes problematic.

Here the value of the conference interactions for the learning outcomes evidenced by individual group members might be visible in the content of summative assessment submissions, or in feedback elicited from learners once a course is completed and examined, and they are 'in the world' applying the learning?

## **Examples of CMC in Practice**

The opportunities and limitations of CMC require changes and adaptations in human behaviour for successful communication to take place. Skills develop over time and in service of the task in hand. In short, they are functional and context–specific. This 'evolution of practice' is (inexactly) matched by developments in technology and of the software that support its use – which, however welcome, call again for adaptation and change. Every teaching and learning domain is unique and, even within institution, subject discipline and course itself, there is no guarantee that what works for one cohort of students will do so the following year for another.

For this reason we are unable to give a generic set of guidelines that meet the needs of all CMC users. The guidelines linked to this section are grounded from studies of CMC experience across a range of teaching and learning environments. Individual case summaries, from which you might recognise circumstances and issues that are similar to your own, are also linked.

Each case study text, and the guideline documents themselves, are organised under five broad areas of concern, identified by teachers and learners as 'issues to manage' for effective educational communication within CMC environments:

- **Character of the communication:** interaction, spontaneity, pace, coherence, permanence, medium, register, topic threading.
- **Self-perceptions:** confidence, visibility, benchmarking, equity, management.
- **Learning and teaching relationships:** roles, attributions, social patterns.
- **Getting things done:** task grounding, preparation.
- **Continuity with curricula:** context, co-ordination, integration, assessment.

A specific **evaluation** section per case study is also included.

The [Grounded Guidelines and Case Studies](#) section opens in a new window for easier navigation.

Literature sources are listed for those who are interested in developing their own understanding.

## Useful links and References

Communication Conventions in Instructional Electronic Chats (1997)– Karen L. Murphy and Mauri P. Collins in FirstMonday issue 2 [http://firstmonday.org/issues/issue2\\_11/murphy/](http://firstmonday.org/issues/issue2_11/murphy/)

An experiment in group learning technology: evaluating critical thinking in face-to-face and computer-supported seminars D. R. Newman, Chris Johnson, Clive Cochrane and Brian Webb School of Finance and Information, Queen's University Belfast <http://www.qub.ac.uk/mgt/papers/ccvsem/contents.html>

[FDTL project 'Assessing Groupwork' outcomes.](#)

Internet Detective: an interactive site on evaluating the quality of internet resources: <http://www.sosig.ac.uk/desire/internet-detective.html>

<http://www.windweaver.com/internet.htm> – 'how to fight fair online' and 'recommended emoticons' might be useful. Sensible guidance about online communication – useful for students as well as worth keeping in mind ourselves.

<http://www.atimod.com> accesses the home page of Gilly Salmon, of the Open University's Business School. A lot of useful information from recent presentations and publications. Those who are 'emoderating' (managing an online discussion group, or actually tutoring online) might find the 'techniques for CMC' chart useful to reflect upon.

The Moderators Home Page Zane Berge and Mauri Collins page of advice and resources, with link to Interpersonal Computing and Technology Journal (IPICTJ) <http://www.emoderators.com/>

Electronic collaboration – a practical guide to educators from Brown University <http://www.lab.brown.edu/pubs/collab/elec-collab.pdf/>

The learning commons resource from staff at the University of Calgary <http://commons.ucalgary.ca/about/index.html>

Four papers on CMC by Jacob Palme at the University of Stockholm <http://www.dsv.su.se/~jpalme/four-papers.html>

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