The Getting of Information
Integrating CMC and postgraduate distance education

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Introduction
Opportunities for students to collaborate, share and read each others'
work are difficult within conventional approaches to distance
education. Computer Mediated Communications (CMC), however, are often
seen to promise an unrivalled capacity and flexibility in this regard
(Goss, 1995). CMC-based educational practices are increasing
internationally. Nonetheless, as well as the need for sustained
improvements to the software and equipment available, a more focussed

concern for CMC-based pedagogies is obvious (Berge and Collins, 1995).

In this paper we present our reflections on the introduction of CMC
into the structure of an existing EdD program offered as a part-time
professional doctorate in the distance education mode through Deakin
University. The authors are part of a team of researchers aiming to
provide a preliminary account of the formal transition of the EdD
program from a primarily print-based system of curriculum and
administration to one which is based in digital-electronics. We draw
on a range of data that details procedural, substantive and evaluative
documentation collected from our research documents, electronic
archives, and an evaluation of the Interchange project compiled for the

University's Information and Technology Services (Goodwin et al.,
1995). Three different perspectives are placed alongside each other
here as alternative stories of practice in the interests of compiling a
detailed representation of the 'getting' of information technology in
an existing eduational program. We begin, though, with some
contextualising description and explanation.

The EdD program
Deakin University's Faculty of Education offers a structured research
doctorate (EdD) to educational professionals in Australia and overseas.
 This is a program of extended study for experienced workers in
education, catering for the research training needs of people in
management positions and those whose work has an educational or
training orientation (Brennan and Walker, 1994). The course provides
for individual inquiry and scholarship, culminating in the presentation
of a folio of work including a substantial thesis. Group activities
and presentations are encouraged through the annual residential schools
and through various forms of off-campus contact. Each student has a
Principal Supervisor. However in the first two years, particular units
on fieldwork, methodology, research writing etc are co-supervised by
members of the course team as group activities to which each student
contributes their own inquiry-based activities and assessment. We go
on below to detail the introduction of CMC into the pedagogy of one of
these units Research Tasks B, during Semester One, 1995.

The EdD Interchange Pilot
In December 1994, the Graduate School in the Faculty of Education was
funded to set up a project which would make the Education Doctorate
course one of the pilot groups to use Deakin Interchange. This
research was to be part of a project that would investigate the
incorporation of electronic communication into the professional
doctorate and inform ongoing technological developments within the
University. Our research plan notes that it is hoped this account of
the 'technocultural practices' surrounding the introduction of CMC into
the EdD would "constitute the first phase of an on-going program of

research and teaching, expressly at the level of university postgraduate educaton and professional studies" (Green, 1995). This has meant that supervisors, students and the research team have needed to work and struggle towards the development of a "shared, critical sense of the emergent culture of the program" at the same time as the development of "specific skills and capacities with the various technologies that inform and enable the program".

As a research team, our project is concerned ultimately with what Green (1995) has termed the operational, cultural and critical dimensions of tertiary teaching and learning. As Green notes (p.3):
The organising thesis is that the most effective pedagogy in this regard is one which works with a self-disclosing, negotiation emphasis and expressly seeks to draw together operational-technical and cultural-critical orientations and emphases, thus integrating apprenticeship and criticism. This applies equally to supervisors and students. It means that as much attention needs to be given to developing a shared, critical sense of the emergent culture of the program as of specific skills and capacities with the various technologies that inform and enable the program.

Our emphasis here on recording and reflecting upon our developing new professional practices in this regard is designed to help focus on, and emphasise, the primary purpose of educational technologies: to enable educational things to get done. Our report in this paper is therefore a report of practice in practice -- within the constraints and logistical determinations that are, for most of us trying to get

educational things done in research settings, both difficult and unpredictable.

CMC through Deakin Interchange
Deakin Interchange is a suite of software for gaining access to a variety of networked services at the University. It has an easy-to-use graphical interface and enables students and staff to connect to Deakin either by direct network connection on campus or through AARNet or via modem from off campus locations. Its main components are:

• Electronic mail, with simple file transfer (through the software Eudora). This can be one-to-one or one-to-many or many-to-many and may be sufficient communication access for supervisors and individual students and provide an ease of transfer of written work.

• Resource access: this is through a number of network tools enabling telnet, gopher, ftp and World Wide Web tools for accessing the Internet, library catalogues and the library's CD ROM collection of bibliographic databases. Other administrative tools will later be added to the Interchange menu.

●Computer conferencing - again with simple file transfer - through the software, FirstClass.

It was this last component, the conferencing facility, that is the focus of the research reported here, and that in large part determined the selection of Research Tasks B as the focus for our initial attempt to use the new Interchange Software within the EdD program. As we go on to show, asynchronous computer conferencing requires particular consideration by staff involved, as it impacts significantly on their work styles, sets up different expectations from students, involves a work role of moderation and administration, and significantly changes the delivery mode of distance education. While the emphasis on student text production remains, the mode of production changes from being a more independent mode of learning for the student, with a negotiated pattern of interaction with staff members, to one where there is a possibility of more active and constant community electronic interaction.

As Green (1995) notes, a major focus for the project is the question of the emergence of a 'network' or 'community' association within the course group. Research on the development of 'electronic communities' (Poster, 1990, Berge and Collins, 1995) or 'electronic networks' (Riel and Levin, 1990) suggest a set of key questions that inform our work. These include questions about whether a group embarking on CMC already has a prior existence as a group; about its need for and ease of access to CMC; about its reasons for working together; and about the role of the facilitator. Such questions were useful in shaping our rationale for the work of setting up such an electronic community in the EdD. The particular questions informing our efforts as we set out to plan this research intervention, though, were:

What is the problem for which these technological innovations are the solution?
Whose problem is it, and whose solution?

The original plan for trailing Interchange conferencing software was outlined in the following terms:
● 'e-conference' as part of EAX908 (Colin). Due dates: May 19, June 16. This arguably needs to get priority since it brings together different aspects of the EdD program: writing, assessment, teaching, learning, organisation, etc. It becomes therefore a mini case study

within the larger project, and serves a diagnostic and reconnaissance function vis-a-vis subsequent areas of focus and analysis. To be documented as fully as possible (NB this should include the exchanges between the students and between students and supervisors, and hence permission needs to be sought to this effect). (Project Document: Research re-focus [amended March 30], Green)

Berge and Collins (1995:186) claim that, as educators, "we need to focus on the important social interactions that technology facilitates and train ourselves and our students well enough that the technology itself becomes transparent". It is clear from this extract from our Project documents that this is the major emphasis of this particular research task. It is also clear that the assumption of a transparent technology during these very early days of the incorporation of Interchange into the program was clearly compromised by its very newness and unfamiliarity. The stories of the first e-conference then can be read as stories of frustration on the part of many students and staff concerned, where technological issues seemed to overtake, in practice, pedagogical concerns. They are stories of initiation, of a first run through, and in detailing this here we hope to provide readers with an account of the sorts of problems and issues that mitigate against the development of transparent technology and instead produce technological problems for which technology is the solution. For McDonald (1995:543)

Technology [...] is a device, but it is also a discourse and the relationship that emerges between the machine and people. If technology is framed in this more holistic manner, we can move away from thinking of it as merely a "tool" or a "neutral" vehicle transmitting various forms of information, ideas and knowledge [...].

McDonald sounds a warning against the very aim of refining a 'transparent' CMC conferencing technology. He argues that such decontextualised learning depersonalises participants and denies difference, using the concept of 'formatting' to argue that bureaucratic "techno-formats shape hardware, software, and end user interaction and social organization" (543). We will return to this as a conceptual problem for the EdD pedagogy after first outlining three stories of the problem of achieving some sort of transparency for the technology at work.

As a research problem, this, as we saw it, belonged to the Course Team (Rob Walker, Colin Henry, Bill Green and Elizabeth Stacey). The EdD students did not have a problem, as far as we could tell, with supervisor communications, and the team had attempted explicitly to encourage student-student communications within the compulsory unit Research Tasks B.   For these reasons, a technology that promised to assist in the improvement of student-student and student-supervisor communications seemed to the Project Team (Rob Walker, Colin Henry, Bill Green, Elizabeth Stacey and Jo-Anne Reid) to be worth testing.

Story One: Implementation of the Pilot
The Interchange evaluation report was partly compiled by one of the authors, Elizabeth Stacey, who gives the following account of the larger institutional context impacting on the events surrounding this initial conference.

In February, 1995, after agreement was reached with the Interchange
development team for the Education Doctorate group to be a pilot group,
students were first informed about the project which they were told
would run for 4 weeks in April/May. Information about their computer
and modem capabilities was requested and provided to the Interchange

Development and Support staff and EdD team by 10 April.

The corresponding EdD research project was designed to trial
Interchange within First Semester coursework which initially requiring
some electronic submission of documents by part of the group in early
April, an electronic discussion from April until June and a final
activity of a second group was designed to be an electronic exchange of
documents and an electronic discussion from May 19- June 1.These
dates, given to ITS staff in early March, were set as target dates for
having as many students and staff as possible with access to
Interchange.

The EdD course team and staff were provided with hardware and software
by the end of April. All involved EdD supervisory staff were informed
of the project and when the first trial versions of the Interchange
software were available (late April) all were individually shown its
capabilities as well as how to access and communicate in FirstClass
where the EdD conference was established.

The original target dates proved to be impossible to reach for both the
 development of Interchange with full testing of the product on both PC
and Mac platforms, for support staff training and for adequate
documentation to be produced. Staff were unable to provide the
dedicated development time to Interchange and project management had
not been clearly defined to meet the agreed timelines.

The EdD, staff and students also required a greater lead time to learn
the use of Interchange and solve their equipment and access problems
to be fully prepared for the introduction of an innovative course
delivery process. The pressure of these timelines have been difficult
for all concerned and in a future such development would have to be
carefully managed.

On May 1 it became imperative that the EdD research team attempt to
gather some research data during Semester 1, since students had been
informed of their requirements, ethics permission had been granted for
research and the research team leader was not available in Semester 2.
Agreement was reached with ITS at the beginning of May that 15 May
would be the date for the EdD pilot to begin but not all aspects of
development, documentation access and support were finalised. A two
week leadup was still not sufficient for these tasks to be completed
and the EdD pilot was significantly hindered by these expectations.

The PC version of Deakin Interchange was mailed out to EdD students by
18 May, however disk and documentation errors with the first mailout of
Macintosh software meant that students with Macintosh computers were
unable to come online until a later mailout in early August.

With the difficulties of getting all students on line, the June 1
research target was abandoned and a decision was made by research team
to run a teletutorial instead of the expected electronic discussions.
(Goodwin et al., 1995:10)

Reflection on the Interchange Pilot
Computer conferencing sets up a potential electronic community of open
and public group discussion, whether between small course groups or
over a whole course cohort. However it requires an understanding by
all participants of the function it serves and the role of all
participants. Such an understanding is crucial to the success of CMC
as it implies an academic community that includes high staff
participation. Mason (1994: 60), in summarising a wide range of
experiences of CMC in course use states that "the medium is very

dependent on the teacher setting an appropriate climate and structure
for interaction".

Students are unlikely to use this model if staff are not active in
either setting up a purpose for its use or involved in some electronic
participation - particularly in the initial phases when students are
learning the protocols of the medium, starting to experiment with
electronic discourse and overcoming their own fears of the technology.
Staff involvement providing purpose and feedback to all early
electronic attempts are vital in establishing the interactive learning
community.

However the pilot introduction of Deakin Interchange left little time
for the establishment and learning of these roles. EdD students were
generally inexperienced with electronic communications and were not
particularly confident computer users (see appendix). As the software
was in a test stage of development, much of the time for students was
spent in solving installation and access problems rather than learning
to communicate in this new public electronic forum. These problems
meant that not all of the students were online by the required semester
dates and several reflected that the pressure of this timeline and
their feelings of computer inadequacy stressed them considerably.

Staff, too, had not had the time needed for learning both the use of
the technology and strategies for good conference facilitation. A
period of supported experimentation would enable teaching staff to gain
confidence in using an innovative form of delivery. With the
difficulties of getting all students on line, the original research
target was abandoned and a decision was made by the research team to

run a teletutorial instead of the expected electronic discussions.
Despite these difficulties, an online conference which was established
for the purpose of the planned sharing of materials and discussion was
used effectively following the teletutorial for follow up discussion by
students and staff who had managed to gain access.

When the pilot project was evaluated even the students who had been
unable to gain electronic access were able to see a clear educational
potential in the use of computer conferencing and in Deakin Interchange
in general. They were generally willing to recommend its use to
others. One remote student in the Northern Territory, for instance,
looked forward to

references to share, summaries of what colleagues have found/are
interested in which relates to my work, group work as we did by
telephone (a written record would be better), supervisor to respond-
save a week or two of time.

Students saw the Interchange facility reducing their isolation and
improving their access to staff and resources, but suggested that all
teaching staff should be present on conference for it to be credible.
They further noted that a structured discussion could be the best use
of conferencing. As one student said, "conferences and discussion
groups dealing with themes or issues for a limited time frame could be
useful".

Story Two: Research Tasks B
Research Tasks B is a Semester One unit co-ordinated and taught by one
of the authors, Colin Henry, in the second year of the EdD program. In
previous years the unit has enabled Colin to operate as a research
broker of student work, duplicating and disseminating assignments
submitted by students to all course participants via Australia Post.

Research Tasks B is a set of research-related tasks students undertake
in the first semester of the second year of Deakin's EdD program. The
unit is designed to build on a similar unit undertaken in the first
semester of the first year of the program. The second series of
research tasks 'build on' the first in the sense that students are
expected, where appropriate, to make use of the readings and other
resources they were introduced to at that time. Taken together, the
purpose of the structured research units is to increase students
appreciation of the range of research methodology they might employ in
the dissertation and elective research they conduct in years 3-6 of the
program.

In outline, the unit consists of a series of tasks which invites
students to write short pieces about three matters: (i) their current
perceptions of the value of educational research and its relevance to
their educational work; (ii) some new research possibilities; and

(iii) some important ethical and political issues associated with educational research in the workplace.

As part of the process of assisting students to increase their understanding of the range of research methodology they might employ in their dissertation and elective projects, Research Tasks B endeavours to provide opportunities for self-assessment. To that end, students are asked to consider such questions as: What is your frank assessment of the practical value of educational research? What do you think of the claim that the major task of educational research is to discover whatever is being overlooked in educational situations? Can practitioners do real research? Do you see any truth in the proposition that education ceases to be 'educational' in the absence of an active and enquiring profession? What practical and ethical standards do you think should be used in judging the worth of educational research?
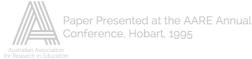
We also try to encourage students to think about where there might be gaps, hesitations and uncertainties in their current understanding of the research they might undertake. Consequently we invite them to consider a range of questions such as: What do they want to be able to do that requires capabilities of which you are unsure? What are your expectations of yourself as a researcher? How realistic, and realisable, are your expectations?

By the end of the unit (the third semester of the program) our hope is that students will have a more precise idea of the kind of research they might conduct during years 3-6 (when they undertake their dissertation and elective research projects). More specifically, we are hoping they should be able to (i) specify some of the things they want to learn about research and research methods; (ii) tell us some of the things they want to learn to be able to do with confidence, and (iii) have some ideas about situations within which they might develop this knowledge and those skills. Essentially, then, we invite students to set their own aims for the upcoming units, most immediately establishing what they might want to achieve in the Proposal Writing units (which specify their dissertation and their elective research tasks and are timetabled for the second semester of the second year of the program).

The work for the unit is based on a series of tasks which are intended to achieve the aims just described. The tasks are grouped under three headings:

1. Perceptions, possibilities and politics Where does research and doing research fit into your work, your workplace and your career?

Where might it fit? How might your research affect others and their work?

2. Cohort audit   As a group, what is it that you know and know how to do? What might you do and learn to do? What kind of resource could you be for one another?

3. Taking aim   What are you hoping to achieve? What immediate goals are you able to set, especially in relation to the dissertation proposal and the four elective projects?

Examples of the tasks are set out below.

1.
The first task invites you to consider your current views on educational research and your feelings about its value and significance in your current educational work. Jot down a list of the first 3 or 4 impressions that come into your head when you think of 'research'. Then write a brief paragraph about each of your thoughts. Ask two obliging colleagues to do the same. Find time to show your comments to each other and compare your views. Then write 2 pages in which you record the most significant points that came up during the discussion. The brief paper should answer the question, 'What does this small research exercise tell me about my own and my colleagues' personal perceptions of educational research (valuable or useless, esoteric or practical, indispensable or unimportant, etc.)?'

2.
This task may seem eccentric because it draws your attention to a case of practical research undertaken by an executive in the meat industry (of all places!). (Genuine apologies to the vegetarians out there.) It may also be a better example of naturalistic than social science! The resource for this task is the article on feedlot research attached to this study guide. It outlines a feedlot manager's considered views on research and where it fits into his work, workplace and career. We are asking you to compare and contrast his general attitude to research with your own and then write one page in which you summarise this person's reasons for conducting research on the operation of the feedlot. How does his perception of where research fits into his work, workplace and career compare with your own? Are there similar reasons for believing that the educational institution you know best would benefit from implementing a similar research project? Why does research for improvement often seem to be more valued in agriculture than in education?!

3.
The task here is to think about additional research questions and additional ways in which you might go about studying aspects of your work and work situation. To get you started, read the attached 'Research questions in Social Education'. Then see if you can outline

a comparable number of research questions and methods for finding the
answer to those questions (7 or 8 will do) in your own particular area
of interest. You may, for instance, be interested in questions about
the work of principals, or social justice, or competency based
vocational education, or workplace training. The task is to outline in
approximately 2 pages some possible starting points for doing research,
and some suitable research methods you might use.

4.

For purposes of this task you will you will need to find a report of a
research project in your own area of interest. You may, of course,
choose one of the readings you have been studying as part of the
literature review unit (EAX 916). The product we want you to produce
here is a 2 page piece in which you identify the question the research
is designed to answer, and the approach adopted by the researcher in
answering that question. Does this research suggest a problem you
might investigate? Does it suggest a methodology you might adopt, and
a justification of that methodology?

A communitarian objective and Computer Mediated Communications
A further significant aim of the unit is to enable each member of the
cohort to take advantage of the shared understanding of the group.
Thus we endeavour to have each member of the cohort contribute
substantially to a data base of information on views of research and
research methodology and the actual and potential place in of research
in the educational workplace. In the past Colin's task has been to
compile this data and make it available to other members of the group.
That has involved collecting students' writing, copying and collating
it, and sending it by mail to members of the cohort

In 1995, so as to take advantage of the combined resources of the EdD
cohort, the aim was to enable students to exchange their responses to
the research tasks (14 or 15 pages of writing in all) with each other
through the computer conferencing function of Deakin Interchange. We
were hopeful that through CMC we could not only speed up the process of
exchanging material, but instigate a series of reflexive interactions
between students about the research they wanted to do, the research
methods they wanted to use, and the kind of political and ethical
problems they believed they should try to avoid. The 'nuts and bolts'
of this arrangement were that students would submit their first
assignment via the the computer conferencing function of Deakin
Interchange on or before May 19th, and then submit a second and final
assignment by electronic mail on or before June 16th. (The second
assignment, referred to as Taking aim above, required students to
write five pages which showed how their peers' reflections had helped

them to think more critically and expansively about the kind of
research they might conduct).

As events transpired, technical problems prevented the electronic
network from being established in time to meet the May 19th deadline.
Technical problems (such as students using computer programs
incompatible with our own) also frustrated the fall-back position of
having students submit their first assignment via electronic mail.
Eventually we were obliged to retreat to the previously used proecedure
of copying, collating and sending material though normal mailing
arrangements. There were 6 students involved in Research Tasks B, at
this time, only two of whom lived in Victoria or had direct access to
the Deakin network. Four were from other states, and the remoteness of
their locations was a significant factor in the delays we experienced
in setting up the conferencing activity. By May 19 only one student
was able to access the conference facility.

Story Three: Getting Wiser
Members of the EdD research team were following the technological
problems with increasing concern as it became clear that students
enrolled in Research Tasks B were not going to have easy (and in some
cases, any) access to Interchange in time for sharing and discussions
around their first assignment. Our research records contain the

following memo written on May 4, just under two weeks before the May 19
submission date:

Clearly time is at a premium here. As you can see, we have built in a
back-up option, should the Interchange system not be fully operational
for this phase of the program as well as the Project. This back-up
similarly draws on available communications technologies, so if
Interchange for whatever reason is not up and running, for all
involved, we can still further the aims of the project generally, as
well as those of the EdD program. (Memo: Bill Green to Project Team
May 4, 1995)

But this story is taken up now from our research archives, and
represents selections from the series of email messages and CMC
conference exchanges sent and received by one of the authors, Jo-Anne
Reid, around the first electronic conference. Names and details of
students have been changed to protect their anonymity. The story
illustrates and elaborates details included in both of the preceding
accounts. The messages and exchanges to some extent speak for
themselves, and can be read chronologically as a sequence, with email
and e-conference postings sometimes overlapping. This sequence is
followed by discussion of the e-conference itself along with the
associated electronic 'interchange' that accompanied it. Although all
of the six students did not partake in the CMC e-conference for

Research Tasks B , all did participate in the exchange and interchange
of work to some degree. The students are referred to here as Paddy
Daniher, Simon Storey, Janine Tonge, Karina Houseman, Jennifer Morris
and Lionel Warne. Only names of students, locations and distinguishing
comments have been altered in the copies of these electronic messages.

By the May 19 date, of the six Research Tasks B students, one, Storey,
had already submitted a document to Colin. This was in print form, and
as CMC novices most of us in the Project Team had had little immediate
success in downloading a version sent as an electronic attachment. So
our Back-Up plan went into operation, with all students then being
asked to send in a disk version with their hardcopy. The disks were to
be returned to people not yet on Interchange with a full set of six
submissions in electronic form prior to a teletutorial to be held
during the week of May 29. But this target too, proved difficult to
reach:

X-UIDL: 801128984.010
From: Jennifer.Morris@educ.umex.edu.au
Date: Mon, 22 May 1995 13:04:33 +1000
X-Sender: jMorris@postoffice.umex.edu.au
Mime-Version: 1.0
To: jreid@deakin.edu.au
Subject: Re: Re:tries!
Status: U

>I am trying to see if i can reach you. No luck to date with Elizabeth!
  Yes, we're >in communication! I got your fax the other day too.
thanks! It looks as though >everyone will be sending in disk copies of
Colin's Research Task, though not >EVERYONE by the due date tomorrow,
so we'll get your disk back asap! It will >still be quicker than the
printer.
>Cheers, Jo-Anne

And my disk is not there yet either! I am moving along quite
comfortably but hope to have it all finalised by the end of the week. I
need to speak with Collin about a section which I will send by email.

Good to be in communication
Thanks
Jennifer

X-UIDL: 801733915.002
Sender: Paddyd@hestia.ccs.deakin.edu.au
Date: Mon, 29 May 1995 10:00:51 +1000

To: jreid@deakin.edu.au
From: Paddyd@deakin.edu.au (Paddy Daniher)
Subject: EAX908
X-Attachments: :EdD 1/95:132:Daniher EAX 908:
Status: RO

Joanne
Thanks for the hint, and I aploogise for the delay in forwarding this
material. Task 3(b) is stuck in a file I cannot open, but I will re-do
it and send it ASP Do you want this material on disc, or is the
electronic attachment OK?
Many Thanks
Paddy

Attachment converted: Jo's HD:Daniher EAX 908 (WPD0/SSIW) (00000829)

Wednesday 31 May 1995 7.32.11 pm
Research Tasks B item
From Joanne Reid
To Research Tasks B
Subject: Research Tasks B and the teleconference

Paddy sent me an email today about the date for our on-line conference.

I think it will be a teleconference, and I will ask you to book the
night of Thursday June 8 (8-9pm) for this. We will try to get everyone
on (phone) line, a week before the June 16 assignment date.

As yet it seems as though you are the only member of the Student group
who is on line, Paddy -- and although your assignment for this
conference is also on line, I cannot get at it (because it is on line
in Word Perfect and my machine isn't equipped to receive, decode or
whatever, anything apart from Microsoft Word 5 0r 4) and I suspect
there might be others in the same boat, or at least there might be
others in the same boat if they were on line!! Oh dear. This will
make a fine case study, but in the mean time, please let me pass on
Paddy's BRILLIANT suggestion about us asking everybody to use the same
software if we possibly can.

Simon Storey sent his assignment in twice -- once in print form,
impressively early, and then again (once he'd go the info about our
electronic attempts) on disk. Unfortunately his disk was an IBM disk,
and we spent a long time looking at it and wondering! I haven't told
him this yet, because he went to Wagga Wagga, and Colin suggested that
he post out print copies of the assignments that had come in at that
time.

So, Simon, Janine and Karina each will have received copies of each

other's papers, Paddy and Jennifer are still out there in the dark I
suspect.   And we cannot get Paddy's out to you quickly because it's in

an incompatible format.   It is just as well that this is an action
research project, because, people, we do have a lot to reflect on and
replan for our future electronic interactions!

X-UIDL: 801994043.000
From: Jennifer.Morris@educ.umex.edu.au
Date: Thu, 1 Jun 1995 12:36:35 +1000
X-Sender: jMorris@postoffice.umex.edu.au
Mime-Version: 1.0
To: jreid@deakin.edu.au (Joanne Reid)
Subject: Re: Research tasks B

>Jennifer, [...] I am just checking to see whether you have sent in
your assignment >and received copies of the other people's work? You
won't have Paddy Daniher's, >as his is in Word Perfect and our
computers only read Microsoft Word, and it's still >sitting on my
attachments file till I figure out what to do with it!
>BUT, we will be having a teleconference on Thursday June 8 (8-9pm)
about these >papers, which is to be confirmed by me tomorrow.   I'll be
back in touch! You >don't seem to have Interchange as yet, so we'll
stick to email.
>Cheers, Jo-Anne

Jo-Anne
I am in the final stages of my work no you still don't have it! I
realise that this is a problem given the nature of the work you are
trying to do.The assignment is enjoyable and purposeful and i am not
finding it a chore,just the time to do what needs to be done.
I have received Interchange disks WED, but haven't installed these
yet.   I know that I am making it difficult for the rest of the group
but I have a huge load to carry here.I am teaching all this week,plus
all weekend and the largest part of next week. This is the end of
semester thank goodness. I will work hard at completing this tonight
and tomorrow.
Thanks Jennifer

X-UIDL: 802261547.006
Sender: Paddyd@hestia.ccs.deakin.edu.au
Date: Fri, 2 Jun 1995 11:01:06 +1000
To: jreid@deakin.edu.au
From: Paddyd@deakin.edu.au (Paddy Daniher)
Subject: EAX 908

X-Attachments: :EdD 1/95:117:Daniher EAX 908 Word:

Joanne Thanks for the information concerning the teleconference is it easier to hook up from my offic rather than a home phone? I have attached the information I sent as a WORD document and mailed a copy to Colin. Robin got a copy last week
Let me know id this attachment translated OK Regards Paddy

Attachment converted: Jo's HD:Daniher EAX 908 Word (WDBN/MSWD) (00000929)

Friday June 2nd 11.19.58 PM
Research Tasks B item
From Simon Storey
To Research Tasks B

Subject: Research Tasks B and the teleconference

Jo- Anne
I appreciate your problem with translating from an IBM format. I do have a personal Mac computer but it is not suitable for the Deakinet software. I'm sure there is software available to translate from one format to another. Anyway, for what it's worth, I am using Microsoft word version 6 in an IBM environment. I have no choice over this [...]
  The good news is I am about to be upgraded to version 7 (I'm sure this wont help !)

As of 2 June 95 I have yet to receive the cohort reflections for EAX908 that you claim to have sent.

Regards

Simon

X-UIDL: 802264567.000
Date: Sun, 4 Jun 1995 21:13:30 +1000
X-Sender: sstorey@mail-g.deakin.edu.au (Unverified)
Mime-Version: 1.0
To: jreid@deakin.edu.au (Joanne Reid)
From: sstorey@deakin.edu.au (Simon Storey)

Joanne
Where is the work you said you had sent me ? Also I had better tell you what phone number to ring for the conference on the 8th. Please ring 050 81 6362
Thanks - Simon

>Simon,
>Your disk has arrived safely here, and I'll take it in to Colin today.
>Some assignments are still coming in, so it may be a few days before
he can get it >back to you! Thanks for the documentation... and hope
Wagga Wagga's treating >you well.
>Cheers, Jo-Anne

Tuesday 6 June 7.00PM
Research Tasks B item
From Bill Green
To Research Tasks B
Subject: Research Tasks B and the teleconference

I thought I'd put up this note on teletuorials that I have extracted
from the Unit Guide for my MEd course Information Technology and
Cultural Practice - I'm going to have a go attaching it as a separate
document [correction - for the moment I'll 'simply' cut-and-paste...,
as below].

The point is (a) the teletutorial this time is a fallback option -
otherwise we'd be using the asychronous contyext of the conferencing
resource on Interchange, which would give us a larger unit of time to
work in and with. This will be more bounded, timewise, obviously - the
point stands, though, that it is a technologically mediated and enabled
form of communication, interaction and pedagogy, so we should be able
to reflect on the experience as such.

X-UIDL: 802567104.000
Date: Wed, 7 Jun 1995 20:56:20 +1000
X-Sender: sstorey@mail-g.deakin.edu.au
Mime-Version: 1.0
To: jreid@deakin.edu.au (Joanne Reid)
From: sstorey@deakin.edu.au (Simon Storey)
Subject: Re: disk

>>Joanne
I received the mail on Tuesday. Thankyou. I'm not sure what you mean
about Karina and Marble Bar ! I have her paper along with the others.
Anyway, I will speak with you tomorow night.
Regards
Simon

X-UIDL: 802612018.002
From: Jennifer.Morris@educ.uvax.edu.au
Date: Thu, 8 Jun 1995 19:05:12 +1000
X-Sender: jmorris@postoffice.uvax.edu.au
Mime-Version: 1.0
To: jreid@deakin.edu.au
Subject: Assignment

Jo I have tried again to attach my paper.Can you read Claris Works?
This may be the problem
I need to get home for the tele conference
Let me know what the score is. I have tried to use the interchange but
have memory problems. Will get help from It here to sort it out
Jennifer

Attachment converted: Jo's HD:RESEARCH 4 (CWWP/BOBO) (000009A5)

The teleconference took place at 8.00 pm that evening, and Jennifer did
make it. Discussion centred around the papers that had been
distributed, which meant that although Lionel's and Jennifer's work was
not discussed because it had not yet been distributed, the others were.
For Simon and Paddy, though, their work was discussed mainly in its
relation to the papers of Janine and Karina, as the discussion around
these two papers took up the entire hour. The limitations of time in
this electronic medium are clear, and well-documented (Wells, 1993,
Berge and Collins, 1995, Goss, 1995). Staff on the conference (Colin,
Bill. Elizabeth and Jo-Anne) had agreed to limit discussion of each
paper to ten minutes, for fairness. The students agreed with this
decision, though it was clear from the beginning that quality of
engagement in the emerging discussion would not readily allow us to
either stop or change tack according to the clock -- and we didn't.
The immediacy of spoken interation was generative of discussion and,
although, as the following message to the conference from Elizabeth
indicates, even the CMC technology of the public telephone system was
not, on that evening at least, as transparent as it usually is.

Thursday, June 8, 1995 8.51.20 PM
Research Tasks B item
From Elizabeth Stacey
Subject: Research Tasks B and the teleconference

Hi everyone -I'm sitting here frustrated that I can't get back on to
the teleconference -all technologies have their down sides!   It's
good to hear you all able to interact verbally -let's hope you can

continue the discussion on this conference.
Elizabeth

It is clear that both Elizabeth, here, and Bill (June 16, below) are flagging the desire for all participants to continue the verbal exchange of the teleconference in written form via CMC.

Thursday, 8 june 1995 10.55:36PM
Research Tasks B Item
From Jo-Anne Reid
Subject For Simon

Simon, I was fascinated tonight to hear you talk about the training/education distinction in [your] discussions about training/education. I [was reading the work of another student] in Townsville, and he was talking in one of his papers recently about the discussions and arguments they are having there about the 'andragogy/pedagogy' debate. It's the same thing, also couched in VET award restructuring terms as the distinction between skill formation and training, and clearly the big issue in all adult education discussions now -- the content/process distinction, parts/wholes etc etc. There's a nice discussion of the history of teacher education/training in Brian Simon's (1985) book Does Education Matter? Lawrence & Wishart, if that is any interest/use. Cheers.

Thursday 8 June 1995 10.41:11PM
Research Tasks B Item
From Jo-Anne Reid
Subject Teletutorial

 Good to hear you all tonight. I thought I'd just put the references we talked about up straight away for those who want to get hold of any of them:

Bourdieu, Pierre and Wacquant, Loic (1992) An Invitation to Reflexive Sociology, Chicago, University of Chicago Press.

McLaren, Peter (1994) Critical Pedagogy and Predatory Culture, Routledge OR Bergin & Garvey -- there were two thoughts on this!

Also, following the discussion about Jenny's's teaching as art/craft and/or science, the following might be useful too:

Boomer, Garth (1988) 'English Teaching: Art and Science' in Bill Green (ed), Metaphors and Meanings: Essays on English Teaching by

Garth Boomer, Hawthorn, AATE.

Thursday, June 13, 1995 6.46.20 PM
Research Tasks B item
From Bill Greeen

Subject: Research Tasks B and the teleconference

Thanks to everyone for participating. Good to get a sense of 'voices' and 'presences'
however virtual and mediated. I meant to say (but can't recall if I did) how much I enjoyed
reading the research writings you had submitted - much to think on and with, there. Hope to get a commentary/reflection posted on the session from us as soon as we can.

Following this message Simon posted his second (Reflection) assignment to Colin as an attachment to the conference on June 15. This began a series of five postings concerned with the process of converting documents to readable files on different systems and software, though on June 20, the more substantive issues raised during the teleconference were again picked up:

Tuesday, 20 June, 1995 9.17.55 AM
Research Tasks B Item
From Simon Storey
Subject Jo-Anne Reed

Jo-Anne,
Thanks for steering me towards the Brian Simon's (1985) book 'Does Education Matter? Lawrence & Wishart. Unfortunately, the library has done a title search and been unable to locate it. Can you suggest how else I might accessit ?
Regards
Simon

A week later Simon posted another message to his colleagues in the course, and, as the following copies of messages indicate, this began a short interchange of five more messages, after which, the conference has ceased to be used.

Monday, 26 June 1995 3.04:42 PM
Research Tasks b Item
From Simon Storey
Subject Bourdieu
Attachments: BOURDIEU>DOC

Hi all
During our recent teleconference a text by Bourdieu was discussed. I
have this book and have attatched a few pages that I thought would be
of general interest.
Happy reading
regards
Simon

Thursday 29 June 1995 5.35:28PM
Research Tasks B Item
Fropm Jo-Anne Reid
Subject Re: Bourdieu

Simon, I 'm very interested to see what's in your Bourdieu attachment,
but I can't open it in Microsoft Word. I have Claris works too, is
that any good. Failing that, can you copy it and put it inside a
message, or is it too long?? (I'm a bit scared to ask that in case
it's also Not Good Interchange Practice!). Have you had any luck with
the Brian Simon? I have the book right here and can easily copy the
chapter for you. Cheers!

Friday 30 June 1995 10.47:38 AM
Research Tasks B Item
From Paddy Daniher
Subject Re: Bourdieu

Simon,
I managed to download the Bordieu attachment and finally print off a
copy. I had some difficulty with it in Wordperfect, but got it in Word
- but with mo formatting.
Many thanks for the document as it made very interesting reading.
Regards
Paddy

Sunday 2 July 1995 2.48:42 PM
Research tasks B Item
From Rob Walker
Subject Bourdieu & Bernstein

I dont know if it is relevant to people's interests but in recent issue
of the British Journal of the Sociology of Education there is a long
and somewhat intense paper by Basil Bernstein on the concept of 'code'
as this relates to 'habitus'. If you have trouble getting hold of this
and want to take a look I could photocopy it.

Wednesday 5 july 1995 8.43:37 PM
Research Tasks B Item
From Simon Storey
Subject Re (2) Bourdieu

Jo - Anne
I can't help you with transfering the Bourdieu attatchment as I too am
on leave (holidays) at the moment. I havn't been able to get hold of
the text in question however I have another of Brian Simon's books.
The library did a title search for me (which I had to ask for over the
phone as I still cant use the library through this contraption). I am
still interested in the text. If you can somehow get it onto the
intershange (or selected quotes at least !) it would be good.
Otherwise, Yes please send me as copy of the extract from the book.
Regards
Simon

All in all there were 27 message files posted to the Research Tasks B
CMC conference list -- 18 from the EdD course/research team, and 9 from

students. These contributions can be analysed as follows:

Research/Course Team		Students	
Jo-Anne	7	Simon	6
Elizabeth	5	Paddy	2
Bill	4	Lionel	1
Rob	2		
Total	18	9	

As an example of a 'scholarly discussion group' (Berge and Collins,
1995), our Research Tasks B conference clearly didn't quite make the
running. Berge and Collins posit three stages in the scholarly

communication process -- prepublication, publication and post-publication and suggest that it is in the pre-publication stage that the unique characteristics of high speed CMC may be most useful. The sort of collegial interaction that is needed at this stage is generally an informal, interpersonal, immediate, 'cutting-edge' and fast review of work in progress prior to publication. This was clearly the intent of the Research Tasks B conference, but the newness of the technology and the inexperience of most of the members of the discussion seem to have worked to produce our conference as a fairly formal affair, where our interchange was spasmodic, intermittent, delayed and reticent, and the power relations of the conference in terms of 'who speaks' are clearly weighted towards staff rather than students. In addition, the notion of pre-publication suggests that the text under discussion during an e-conference of this nature is in draft form, not yet ready for publication. It is clear that this was not the case for these students. Morris (email Mon 22 May, above) for example, writes:

my disk is not there yet either! I am moving along quite comfortably but hope to have it all finalised by the end of the week. I need to speak with Collin about a section which I will send by email.

In our practice as teachers and students then, student papers for discusion were clearly not (to be) seen as drafts, they are "asignments" (Reid, conference, Wed 31 May, above). Morris did not wish to post her 'unfinalised' text to the conference for public scrutiny. Instead she chose to send it privately, 'by email' to the unit co-ordinator, Colin, before going public to the conference. Storey had already submitted a 'finished' printed text to Colin. Berge and Collins discuss several advantages of scholarly discussion groups, noting, for instance, that such CMC discussions are means of gathering scholars together, apprenticing neophytes to experienced scholars, and encouraging diversity speed of response to ideas and drafts, along with the opportunity for 'serendipitous encounters' (1995:188), along with freedom from time barriers. These benefits may well be latent in our initial technological practice, but they are are clearly reliant upon the assumption of a transparent technology. As we attempt to integrate our apprenticeship to the various new skills and capacities we need in order to interact easily with the technologies that inform and enable the Interchange program, though, we must also be aware of the need to develop a critical sense of the culture itself, as it is emerging, shaping or 'formatting' us (McDonald, 1995) as end-users.

Findings and issues
Our initial experiences with Deakin Interchange in practice have highlighted a number of important issues which were not generally understood before we began the research project. Our project is caught up in the 'Catch 22' situation of attempting to provide research information to a system that can't wait for the information to be available before it makes decisions. As such its concerns have

remained in the operational-technical dimension of the getting of (information) technology, rather than in the the cultural-critical aspects of getting smart about our pedagogy in this new electronic environment. As McDonald and Stronach (1989:53) write

How can organisations learn, and use that learning to shape their own actions ....? This is a complex problem, particularly for an academic research programme embedded in pressing political and administrative interests. One dimension concerns the consequences of admitting error. Whereas error may sometimes seem the stock-in-trade of academic research and its identification and correction a respectable pursuit, its concealment is the stock-in-trade of political and administrative advance.

As these three stories illustrate when they are read together, it is clear that an undue emphasis on achieving a transparent technology may well be such an error. Appropriate attention to the cultural-critical aspects of our EdD pedagogy is essential for the development of the sorts of operational-technical skills needed to enable the course to realise the potential of CMC as a pedagogic medium. Following this initial experience, for instance, we are able to see that developing a culture of collaboration is a problem requiring and involving more than a simply technological solution. It is built through the development of communitarian relationships among participants in the group, both structured through set tasks such as those outlined above, through the provision of opportunities to become familiar with the technology in use, and, moreover, through the development of interpersonal relationships that allow people to be comfortable in seeking advice and assistance. The importance of these relationships remains central to the nature of distance education. As one of the Research Tasks B students wrote in reflection on the process:

The approach taken with the processing of group interactions through the sharing of writings I have found particularly valuable. This process has been an effective model of collaborative interactions and demonstrates how simply but effectively this can be achieved. The teleconference also was very beneficial. To put a voice to paper gives some more information about people's work context and the issues they are facing. The interchange process has not worked for me as technically the hiccups kept on coming. I had little time to keep trouble shooting, though I'm still trying to get it to work!

What was learned from this experience? First, that the unit Research Tasks B does seem to be successful in helping students clarify the kind of research they might undertake, the methodology they might use, and the kind of ethical issues they might try to avoid. Second, that it was unrealistic to think that we could set up and use the system in the limited space of time available to us. Third, that in 1996 Deakin

Interchange has the potential to serve as a means of establishing a 'community of scholars' able to benefit from each others' expertise and experience, if we can iron out the technical problems and refine the pedagogical practices surrounding their use. In this way we believe that the format of an on-line EdD will actively encourage students to participate and thus benefit in the manner Berge and Collins (1995) suggest is common. That is not to dismiss, however, the difficulties of creating the necessary support services for EdD candidates scattered across Australia and other parts of the world.

Issues which need continued discussion and negotiation as the EdD's use of CMC develops include:

What are we trying to achieve by providing a system such as Deakin

Interchange to our postgraduate students?
Where is the best use of computer conferencing?
What do we measure as "successful" use of computer mediated communication?
Are all staff aware of the commitment this imposes on their work styles and time?

Time for an experimental learning and teaching period using an electronic medium is important for both staff and students coming online. During this time it may well be necessary for us to maintain the 'back-up' support systems in operation this year, as we have learnt that many technological problems do indeed seem to be 'just waiting to happen'. Hands-on, supported use will provide all participants with the confidence to incorporate electronic communication into course delivery and participation. A "virtual graduate school" requires all staff equipped to both understand and manage their roles in electronic delivery. Simply setting up this facility and administering it is no guarantee of its success, without accompanying staff discussion and negotiation about the nature of their roles, their commitment and their objectives for its use.

Conclusion
Computer conferencing sets up a potential electronic community of open and public group discussion, whether between small course groups or over a whole course cohort. It requires an understanding by all participants as to what function it serves. In courses such as Research Tasks B, where there is an expectation of collaboration and conferencing there is an appreciation of its contribution to student learning. As this is clearly part of the course objectives, it immediately sets up an expectation that staff will also be involved in responding to student communication. Such public performance of the supervisory role is not an existing aspect of the culture of post-graduate pedagogy, which is traditionally a highly privatised and individualistic enterprise, particularly in the distance mode .

It may well be that staff must clearly understand their obligation in
setting up such course discussions and need to give their students
clear guidelines as to what their own roles in the electronic
interaction will be, how frequently they will be expected to
participate in the conference and define absences just as face-to-face
lecturers do. This is a significant change in the role of many staff
involved in distance education and involves a commitment and an active,
public accountability that raises other issues beyond the scope of this
paper. It may not be appropriate in some situations, of course --
establishing conferences may be unnecessary and would quickly be seen
by the students as a waste of time and money to achieve access --
unless they were aware that their access to and participation in CMC
interchange is of benefit to them as learners.

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Communities: Success and Failure in Computer Networking",
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Education: An International Review of Design, Teaching, and
Institutional Issues, Research Monograph No. 6, American Centre for the
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Appendix
DEMOGRAPHIC FACTORS

Demographics of student participants
All EdD student participants were studying part-time in off campus
mode and working full-time.

Gender	Connection method				Did not connect	
Female	Male	Direct dial	Austpac	Network	Female	Male
EdD 13	131	7	8	7	3	

Of the EdD students who did not connect, 2 were overseas, 5 had not
upgraded their equipment to the required level by the time of the
pilot, and 3 had unsolved installation and access problems. Three who
did not upgrade had arranged other email access already, one with
access problems connected through TEAS and Pinemail, and one overseas
student used a fax modem for immediate communication.

Location of student participants

Melbourne	Geelong	Country Vic	Interstate	Overseas
EdD 3	1	5	14	3

Computer equipment used by Staff and students
Students and staff were asked to provide details of the type of
computer they were using and the amount of RAM installed. In the EdD
group, 19 students had to organise new hardware (all direct dialling
students had to purchase or arrange access to modems, 15 students
needed upgrades of existing equipment or new equipment). Of the 19
staff members 13 were adequately equipped before the project began
(though some with 4mb RAM and 40 MB hard disk space had some difficulty
running all of the program). Many of this latter (4/40) group and the
remaining unequipped staff upgraded equipment during the course of the

pilot project.

	Macintosh (>= 68030)	IBM compatible (>= 386)	Total
EdD	34	10	44

Previous computer experience
In the pilot evaluation questionnaire, all participants (staff and
students) were asked to indicate the categories of software they had
used prior to using Interchange and the frequency of their use. Some
respondents did not indicate frequency so the following table indicates
prior use only. Percentage figures represent the proportion of
respondents to the question in each group who answered yes.

	EdD	MBA	Total
Operating system - DOS	5 (28%)	17 (85%)	22 (58%)
Windows	6 (33%)	17 (85%)	23 (60%)
Macintosh	15 (83%)	6 (30%)	21 (55%)
Word Processing	16 (100%)	19 (100%)	35 (100%)
Spreadsheet	12 (80%)	18 (95%)	30 (88%)
Database	8 (53%)	17 (94%)	25 (76%)
Communication	5 (31%)	18 (100%)	23 (68%)
Electronic mail	11 (61%)	18 (100%)	29 (80%)
Computer conferencing	3 (20%)	15 (83%)	18 (55%)

1 We have drawn considerably on the work of Bill Green, beyond those
words explicitly acknowledged in the text, and his contrubution is
gratefully noted.