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ABSTRACT

This paper addresses two elements of teacher education in the United Kingdom (UK): open learning partnerships and the use of new technologies to develop a model of preservice education and training. The Open University Postgraduate Certificate in Education (OU PGCE) is a part-time course emphasizing standards in teaching and involving partnerships between schools (chosen by the students) and the OU to train teachers. The OU PGCE student population is dispersed throughout the UK, with students often based in their homes. Preservice education courses link remote students with each other and with course academics via an online learning community "populated" by expert and beginning teachers; yearly evaluation of students' use of this community indicate that 60 percent log on daily. Analysis of messages posted in the learning community's "subject/phase rooms" provides a record of how students develop knowledge of teaching. Learning within the online community is a collaborative, shared experience that encourages student driven interaction. Online conferences provide an open learning environment where students can explore and challenge their assumptions and inherent beliefs in a collaborative endeavor to rethink experience. In rethinking experiences, students set the foundation of future professionalism based on knowledge drawn from both the personal and the practical. Online conferencing is a way of developing an interactive professionalism with peers. An appendix presents program evaluation data. (Contains 24 references.) (SM)

The Open University

School of Education

Open Learning, new technologies and the development of a new model of pre-service education and training: the Open University, UK experience

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The Open University is now the largest provider of pre-service teachers in the United Kingdom. The case study will explore the origins and development of the programme focussing particularly on:

- *the unique forms of partnership established with over four thousand schools across the UK and in Europe;*
- *the integration of interactive electronic conferencing into the programme structure.*

The case study will include analyses of a range of formal evaluative studies that have been carried out in the period 1992–1998.

Open and distance learning has been transformed as we move into the information society of the future and the knowledge media brings the correspondence and remote classroom traditions of distance education together (Daniel, 1996). Within the UKOU (United Kingdom Open University) this transformation is most ably demonstrated through an open and distance course in teacher education where new technologies in alliance with traditional distance education methodologies are combined resulting in a new learning paradigm. This paper addresses two elements of the teacher education course; the open learning partnership and the use of new technologies to develop a new model of pre-service education and training.

Open learning: a partnership in teacher training

The OU PGCE (Postgraduate Certificate in Education) is a part time, eighteen month course, which challenges the traditional models of teacher education and the assumptions about the way student teachers move from novice to expert (Berliner, 1988 and Furlong et al, 1995). It is characterised by a focus on standards in teaching which includes a work-based element leading to a professional qualification and an open learning partnership which recognises the school as a site for learning. Partnership is at the heart of the OU PGCE programme and over 4,000 schools across the UK have worked collaboratively with the OU to train student teachers. The partnership is initiated by the student who chooses a proposed partner school on application and entry procedures, which vet all new schools, assure the quality of the future partner. Survey research (Burgess & Leach 1996) has explored the reasons students select a particular school and found that they were chosen mainly for the local reputation they held for "being a good school".

The school as a partner appoints an experienced member of staff to act as "mentor" while the student is on placement at the school. The attachment to one partnership school which has a major training role is a central part of the programme and those members of staff who conduct the interviews become joint gatekeepers with the university, to the teaching profession. The partnership schools therefore, play a powerful role in the selection of the country's future teachers.

In structuring the course the programme team took the unique decision to promote the development of pedagogical subject knowledge through course materials and classroom practice in schools. Pedagogical theory, it can be argued, is grounded in the personal practice of the student (Baird 1992). There is therefore, a major conceptual shift in the positioning of the learner and the notion of the school as a site for learning. The practical experience of students in school is integral to the course and mentors play a vital role in the developing practice of student teachers.

Research projects (Burgess & Harris, 1995; Burgess & Butcher, 1997, 1998) show the complexity and diversity of school based training particularly in a distance learning context. These projects demonstrate that there is a need for carefully conceptualised models of mentoring and mentoring strategies. The novices view of teacher professionalism and their capacity to reflect upon their developing competences as a teacher rely upon the mentors undertaking the responsibilities involved in school based training and developing their understanding of how student teachers learn. As Burgess and Butcher (1998) argue:

> The mentoring challenge is to engage student teachers in critical pedagogy which makes explicit the socially constructed character of knowledge. Gender, social class, culture all impact upon the way knowledge becomes subject in the classroom. Part of the challenge for both students and mentors is to recognise and make explicit these communities of difference and work collaboratively towards an understanding of practice.
>
> (Burgess & Butcher, 1998).

They propose a model which includes four interrelated dimensions:

The first dimension is the student teacher who, to engage in professional growth during their course of initial teacher training, needs to be willing to extend their own subject or phase competence, needs to be orientated towards themselves as the learner rather than the teacher and possess a flexible mental set regarding the perceived role of the teacher.

The second dimension and the one that has received most attention in previous models is the mentor. This role requires the person to have subject or phase expertise, to be oriented towards adult learning, to be a reflective articulator of competences and to be willing to challenge.

The third dimension is the school itself. This must be an institution supportive of professional debate, open to challenge, and a place of learning without barriers. It must recognise itself as the site for student teacher learning in a professional setting, and be characterised by a clarity of discourse which contributes to a continuous reflective improvement cycle.

The fourth dimension is the open and distance learning element of the ITT course which by its nature requires effective mentoring within the programme. This is underlined by the absence of traditional supervisor functions by the H.E.I in school. A far greater significance is hence accorded to the mentor who acts in the role of a professional trainer.

Burgess and Butcher call the link between these dimensions the discourse of challenge. The student teacher can feel safe within a climate of support which both allows and encourages challenge for professional growth in subject knowledge, teaching skills and competences and the wider professional role of the teacher. This discourse is a dynamic process, taking place between a community of learners. It allows challenge to occur at different times and in different contexts according to the needs of the learner. Challenge is also evident in the use of interactive technologies which both support and promote the developing practice of students in schools. Through this medium, trainees reflect, advise, support and offer critique to their fellow distance learners. The experience of being mentored is shared and advice on planning, teaching and assessing pupils is offered. Through the use of FirstClass, the school as a site for learning is enhanced as students learn from each other as well as their mentors. As Tiffin and Rajasingham (1995) argue, the way in which we learn, educate and research is evolving, bringing extraordinary and dramatic changes to the whole learning paradigm.

An on-line community of practice in a pre-service teacher education course: Key Questions.

> "... an emerging world-view of distance education incorporates highly interactive communications technology along with the ideal of both personal and collaborative learning...it is argued that computer conferencing may well be the flagship of this post-industrial approach and ideal of education at a distance. It is a technology that has potential to support learners in collaboratively constructing meaning and confirming understanding."
>
> (Garrison 1997).

One of the most revolutionary aspects of interactive communication technology is the possibility it offers for the development of on-line learning communities. Pre- service education courses can now

link students at remote sites with each other and with the course academics in a collaborative exploration of learning to teach. Within the Open University (UK)'s pre-service teacher education course an on-line learning community has been developed which, like other on-line learning communities within higher education, has the following defining characteristics:

- it is populated by both expert and beginning teachers;
- it is used to share ideas, information and insights about a given theme or topic to support the on-going learning of all members of the community;
- it is used as a place to bring new information for analysis and to rehearse new ideas for reliability and validity;
- it is used to distribute information and to provide a launch- pad into other on-line resources e.g. the Internet etc;
- it operates for twenty four hours, seven days a week; and
- it offers social support .

For those of us who use e-conferencing to teach, the development of on-line learning communities creates a critical moment in the development of our own pedagogy of teacher education. It presents us with a changing context for teaching and learning together with new learning environments which are likely to produce new paradigms for pre-service education courses as we move into the next millennium. A further challenge lies in the absence of comparable models and expertise - on-line learning communities in pre-service teacher education courses being still very much a rarity within the UK. In developing this aspect of our pre-service course, we had very little, other than generic models, to draw on. As such it was important that we developed our own research into the role of on-line communities within pre-service courses in order to evaluate its contribution to the overall programme and the developing aspects of teacher knowledge in particular. This section therefore focusses on summarising the research into the use of on-line communities within a pre-service course which we have undertaken at the Open University's Centre for Research into Teacher Education (CReTE) as part of our own evaluation of practice as teachers of teachers. This research is focussed on three key questions about the value and organisation of an on-line learning community within a pre-service education course:

- What possibilities are opened up for teacher education by the interactive nature of on-line learning communities?
- How can e-conferencing be used to develop knowledge of teaching, and
- Within the course structure, how can e-conferencing and the use of ICT be integrated into the professional lives of beginning teachers?

Opening up possibilities

The student population on the OU pre-service course is dispersed throughout England, Northern Ireland and Wales. The site of learning is the student's home, their kitchen table or study, together with the school which has entered into partnership with the Open University to support the student on school experience. There are many obvious advantages to linking such a geographically dispersed student population through an electronic network using a computer, modem and conferencing software such as ending the isolation of the distance learner and providing a forum in which to debate and discuss course issues. Using the software application FirstClass with its asynchronous, text based communication students are given access to a variety of learning environments. So, for example, in addition to their private mail box, students have access to:

- small groups with restricted access, e.g. their tutor group conferences,
- regional conferences;
- subject/phase conferences;
- the course academics;
- a discussion area open to all course participants (around 1,200 per cohort) called the Education Forum etc.

Students' use of this on-line learning community has been evaluated at the end of each cohort using a questionnaire (See Appendix A), the information from which has provided the basis for in-depth telephone interviews with a small sample of students. Over the past four years this qualitative and quantitative data on students' use of e-conferencing has produced a detailed picture of student participation and practices. The most recent evaluation (Summer 1997) indicates the following main features of students' use:

- Around 60% of the students log on every day, the majority in the evening.
- The subject/phase conferences are found to be the most useful areas to students of the on-line learning community, followed by the students' tutor group conferences, the Education Forum and the Regional Conference.
- Students find the subject/phase rooms useful for, in order of preference:
  - social support;
  - the exchange of ideas about School Experience;
  - contact with students form the same subject/phase area;
  - up-dating information;
  - contact with the line academic;
  - discussion of course related issues.
- Around 28% of students had experienced initial technical difficulties when logging on, but easily found the appropriate support to help them overcome these.
- Around 42% of women and 20% of men had no prior experience of using ICT before beginning the course. By the end of the course 87% of the cohort rated themselves as confident or very confident users of IT, In addition these students felt confident in using ICT with pupils in classroom situations.
- Participation rates in discussions increases following face-to- face meetings or Day Schools and tutorials.
- The majority of students see the conference rooms as a place to go for information. They conceptualise this on-line learning community as a notice board, rather than a seminar room or library.
- Of the number logging on in any week around 25% post messages. A high percentage of students (around 60%) participate in the conferences as Readers only.

The high value students place on the subject/phase conferences has prompted further research into how this on-line learning community contributes to teacher development. In addition we have begun to carry out research into students' different and preferred levels of participation.

E-conferencing: developing knowledge of teaching

The Open University's pre-service course has, as its central organising framework, a model for teacher development which draws on sociocultural theories with its emphasis on the social and situated nature of learning through joint activity (Edwards and Collison, 1996). Particularly useful here is Lave's notion of a community of practice as a field in which knowledge is located and developed by those who participate in that community. Applying this notion of situated learning to electronic conferencing, Leach and Swarbrick (1996) have demonstrated that within the Open University (UK)'s initial teacher education course, e-conferencing is mediated to create a supportive environment in which student teachers can 'rehearse' and begin to understand what it is to be a teacher. Importantly this on-line learning community of expert and novice teachers is organised around subject conferences or 'rooms' each with its own distinctive atmosphere and organisation, which reflect the different subject cultures. (Leach and Swarbrick 1996).

This pattern of use also bears out Grossman and Stodolsky's research (1995) which found that patterns of socialisation into teaching are distinctly related to particular academic disciplines - the concerns and topics for discussion in the Primary room for example, are different from those in the History room. Students' use of the subject/phase rooms indicates that part of the process of becoming a teacher is a process of being introduced to and inducted into a particular subject community and its sub-culture.

An analysis of the messages posted in the subject/phase rooms provides us with a record of that process and points to the way in which e-discourse within the different subject/phase rooms allow for the development of progressive discourse communities which mirror the way in which knowledge is advanced and created in different disciplines. Through a continual critique of the work and ideas within each on-line learning community, students begin to develop their understanding of teaching a particular subject or phase. This is demonstrated in the following contributions to the history conference:

> *"Am I right in thinking of " meanings" as something along the lines of ' interpretations of events'? If so, I think I favour Sylvester's (article in Course Reader) view that history should be "centrally concerned with communicating ways of thinking and knowing about the past", rather than trying to indoctrinate a particular perception of events. As you say, there is no avoiding the ideology issue at some level, for the study of history needs its content, and there can be no 'view from nowhere'. But in concentrating on the nurturing of investigative, evaluative and interpretative skills, rather than the conclusions those skills lead pupils to reach, I think that personal, school and national curriculum biases can at least be marginalised.*
>
> *However, if we do accept the role of history teaching as communicating meanings, why does the view of teaching as an art affect this? Surely the teachers' creative artistry is concerned with the process of communication rather than the manufacture or modification of the meanings that are to be communicated? I have reservations about the whole notion of 'teaching as art', and especially with the concept of 'intuition', but I think they belong to the next chunk!"*
>
> (Robert- Secondary pre-service History student)
>
> *"In my previous contribution to this debate (Of Course Teaching is a Science) I intended to imply that although all thinking (and thus all explaining is theory based, scientific thinking is distinguished by its testability (Karl Popper). I would not in reality use "sod's law" to explain a chaotic classroom situation because it would not help me to prevent the situation occurring again... I might look to learning theories to see what these say about engaging children in learning, I might look to other teachers for advice and experiment with their ideas. Eventually as an 'expert' I might be thought to 'intuitively' know when trouble is brewing and be able to avoid escalation's, but really my 'intuition' would be based on theory-testing - which is scientific."*
>
> (Karen - Secondary pre-service History student)

In these examples, students are developing their basic understanding of the different kinds of knowledge history teachers use. They are sharing their work on the nature of school history in one case and the values of learning theories on the other, drawing from their experiences in school, the course materials and from tutorial discussions. The subject rooms provide an audience of other subject specialists and in this way students rehearse the way in which history teachers reconceptualise their academic subject knowledge so that teaching and learning can take place.

An analysis of the 1997 messages posted by history pre-service students shows that they engaged in 'presentations' about the following areas of history teachers' knowledge:

- **pedagogic content knowledge**;
- **subject knowledge** - information about Richard 11, the Romans, the Peasants' Revolt etc.;
- **knowledge of school history** - discussions around black and women's history and ideas of 'national identity'; the emergence of ' living history' as statement about identity in the late 20th century.
- **organisational knowledge** - discussions on setting up group discussions in history and organising school visits to historical sites.

Students themselves recognise that participation in this on-line learning community can enhance their developing knowledge of teaching:

> *"It (i.e. the e-conferences) offers tremendous support, it gives me a feeling of being connected with the other students. It's also a huge source of information , and lots of subjects in the Primary curriculum have been opened up to me as a result. You're working a lot in isolation - and someone can put a message up about a whole different aspects - and you can think... gosh, yes... I hadn't thought of that aspect... that would never happen if we were just relying on tutorials etc...*
>
> *This conferencing has certainly added to the course. It's offered different aspects/views/ resources which we wouldn't necessarily have heard about otherwise..."*
>
> (Primary pre-service student. 1998).

Learning within this on-line community then is a collaborative and shared experience. Precisely because of this it offers models of working to students which will set patterns for their continuing professional development and their work with colleagues in school. This community provides students with a framework for learning which moves them away from the assumption that teaching is an individual responsibility. Through their interactions and their sharing of different expertise, students learn the value of creative teamwork and in so doing begin to model a process of development which research has shown is a necessary characteristic of the effective school.

> "In effective schools, collaboration is linked with norms and opportunities for continuous improvement and career-long learning....As a result teachers are more likely to trust, value and legitimise sharing expertise, seeking advice and giving help both inside and outside of school. They are more likely to become better and better teachers on the job."
>
> (Fullen 1992).

Restructuring concepts

Not all contributions to the discussions in the subject rooms are carefully prepared pieces, nor are all the contributors from the same subject discipline. This sequence of messages taken from the Primary History folder in the History room demonstrates the value of more open- ended cross-curricular discussions. The contributors are from both the Primary and Secondary phases and from a mixture of

subject domains. This negotiation of shared meaning across subject cultures is seen to provide a source of cognitive dissonance which allows students to restructure their own concepts. It is important here to remind ourselves that education is a matter for the heart as much as the head and that the view of an appropriate school curriculum is influenced not only by students' own subject specialism, but also by their own views on and values about education and the function of schools.

Saturday, January 17, 1998 9:51:13 pm
Primary History Item
From: Sheri
Subject: Re(5): Subject pride
To: Primary History
Cc:

In Science ? You have lost me ! ;-)
A lot of scientific discoveries were made centuries ago and a lot of scientific debate on emerging theories were based on the culture, attitudes and beliefs of the time. Take the industrial revolution based on the invention of the steam engine or the computer revolution based on the discovery of silicon and other semiconductors. Science has, in its way, shaped history. What about the discovery of splitting the atom? This led to atomic bomb invention and the arms race. There's space travel, too, its causes and effects. AT0 in the science NC POS states that pupils need to 'consider ways in which scientific ideas may be affected by the social and historical contexts in which they develop.....' (section 3b The nature of scientific ideas).

I. One of the most important aspects of the Nat. Cur. to me was the fact that right from the start foundations are being laid in all subjects. I would agree that at the start you need to concentrate upon reading, writing and numeracy, you do however also need to ensure that adequate foundations are being laid for all other subjects.

But a broad and balanced curriculum with emphasis on literacy and numeracy will ensure that the adequate foundation for other subjects are laid down. Are you saying that children of this age need to be aware that 'there is a separate subject called history? why?

(Sheri)

This will only be ensured by a retention of the separate orders to be taught.

why? I would have thought it might mean that the emphasis would need to be made on cross-curricular themes/ideas

(Sheri)
(Secondary pre-service Science student).

Sunday, January 18, 1998 3:09:47 pm
Primary History Item
From: Martin
Subject: Re(6): Subject pride
To: Primary History
Cc:

Hi Sherri,

Why not then scrap the orders for English and teach reading and writing as aspects of the really decent subjects like History and Geography !!!!!!!!!!! ;-) (Where do I hide now!!)

Are you saying that children of this age need to be aware that 'there is a separate subject called history? why?

No I do not feel there is a need for children to be aware 'there is a separate subject called history' But I do see the need to ensure the teaching of basic skills required for later development of such subjects. (The classic is the concept of time (usually developed through me and my family projects at Infant level), another is a very basic chronology, i.e. Stone Age, Iron age, 500 BC(What is BC?), 0 - 400 Romans, Vikings, 1066 Battle of Hastings (developed through basic timeline, built upon the me and my family idea, linked to stories used in English contexts). If children do not have theses skills then you are into major problems. To ensure this is taught early enough you need it specified somewhere. So if all your stress is on English you have to have sections to include basic information on History, on Geography etc. You are then back to orders for all subjects!! You would need instead of separate subject co-ordinators, an English sub-section subject co-ordinator.

Alternatively if you take my suggestion at the top then the skills of reading etc. have to be written into all subjects (Before the heavens descend, I DO NOT, seriously propose this, I'm just trying to illustrate a point!)

The problem I see is that if you are going to have effective Secondary Education, this must include a variety of subjects, I would obviously include History and R.E. (;-)), but also the other Nat. Cur. subjects have a role. If you are going to teach them, then as well as being able to read well, write legibly, spell correctly (I still fail here!!!), and handle numbers intelligently, the children must also have the specific foundation skills for the specialisms. Some schools will teach these without enforcement, but will all? If not then you have in secondary classes a variety of levels of skills with major problems of differentiation, especially as the skills are not linked to pupil ability but to home address. To ensure even preparation for later development is what I'm after right thought the school Curriculum.

Martin (Secondary pre-service History student)

Tuesday, January 20, 1998 4:13:06 pm
Primary History Item
From: Lynne
Subject: Re(8): Subject pride
To: Primary History
Cc:

I think to some extent Sheri and Martin are both right !

I feel that KS1 curriculum should be predominantly literacy and numeracy orientated, and I believe this can be achieved by using the subject knowledge from History, Geography and Science, without necessarily concentrating on concepts and subject specific skills. I guess I am advocating a much more integrated curriculum at this level, which allows pupils the chance to grasp the basic skills of numeracy and literacy, while exploring a wide range of knowledge. Children of 5 or 6 do not need subject specific lessons. Once basic skills of reading, library skills, recording information, understanding number values etc. has been achieved, only then do I feel children can move onto exploring and grasping the concepts of Science, History and Geography.

At KS2 I think pupils need to start studying separate subjects in preparation for transition to Secondary School. Perhaps introduce Science as at separate subject in Y3, and combine History and Geography until Y5 when the skills and concepts for each subject could be taught separately. If they have an established knowledge of number, and literacy skills, the exploring side of learning concepts in these subjects must become more prominent as they are free to investigate without constantly being held back by poor number or literacy skills.

(Primary pre-service student)

The unfinished and often passionate nature of the posted messages, the broadcasting of initial thoughts, experience and ideas, invite contributions from other students. Within these contributions, learning can be seen as 'transactional' (Bruner 1987). There is a complex interweaving of language,

interaction and cognition. Learning involves the sharing and testing of inter-subjective meanings and the negotiation of meanings through interaction and empathy. Within these sharing and testing messages students misunderstandings as well as understanding about teaching and learning together with the assumptions about schooling which they bring with them to the course are raised. It is this aspect of e-conferencing which makes it a key learning environment for beginning teachers.

Beginning teachers bring with them to pre-service courses strongly held views of teaching and learning which have generally been formed by their own experiences of school. Part of the task of the teacher educator is to create a learning environment in which these assumptions can be explored and challenged. An on-line learning community has characteristics as a learning environment which enables the exploration of strongly held assumptions, creating what has been termed a 'permissive' environment. As Swarbrick (1996) has pointed out, pedagogic authoritarianism, viewing the students as 'novices' who need instruction is impossible to sustain through e-conferencing. It is often the students who set the agenda and the focus for discussion.

> "In problem-solving situations at synchronous conferences, pressures are great to conform to existing paradigms or to an emerging consensus. By contrast, computer conferences with the veil of anonymity and the temporal and spatial distance they provide, encourage open criticism and the presentation of unpopular or eccentric points of view" (Poster 1990).

On-line learning communities do have a permissive atmosphere precisely because they encourage 'student driven' interaction. In setting the agenda and directing the focus of discussion, it is more likely that students will be willing to express their own belief systems and values. As such e-conferences provide an open learning environment where assumptions and inherent beliefs can be explored and challenged in a collaborative endeavour to rethink experience.

The professionalization of the beginning teacher

In rethinking their experiences the students set the foundation of future professionalism based on knowledge drawn from both the personal and the practical. It is a developing experiential knowledge which is shaped by the values and purposes of the student teacher. The complexity of teacher's work, including the increased use of ICT across all curriculum areas and the technological transformation taking place in schools has placed an additional burden on teachers and mentors. One history student commenting upon her expertise in using ICT and incorporating it into her teaching said:

> *--- In school s I've been in ..if I'm working with the IT co-ordinator with an IT lab I seem to have more knowledge of how to integrate it and to use it than they have.*

Subject knowledge and technical competency, however, form only a part of what it means to be professional in teaching. Through being part of an on-line community student teachers learn to exercise discretion in their judgements, engage in discussions about the moral and social purposes of teaching, work with colleagues in collaborative cultures and share expertise to solve problems of professional practice. The practice of e-conferencing supports students in their developing professionalism as the following comments from history students demonstrate. One student has viewed the whole process as:

> *a group of people grappling with the requirements of PGCE looking to each other for support and ideas.*

Students work openly and collaboratively with a wider community of other students and teachers where the emotional as well as the cognitive aspects of teaching are embraced. The same history student also commented that e-conferencing provided a:

> *Supportive, informative, entertaining ,enjoyable ...* (environment for learning, but that it was) *not relaxed because over the last year there's been ins and outs about what's going on - areas being scrutinised by the specialist is always there at the back of your mind*

while another student said that conferencing in their subject room was like:

conversations going on informally with a tutor in the room

Being able to self-direct their own learning, however, and develop expertise and standards in practice at a pace suitable to the individual was seen as an important part of e-conferencing. A history student comments:

people are relaxed and have much more time to think when using FirstClass they may read a message go away and think about it for a few hours. It's a slower pace and gives you more opportunity to join in

and another student said:

it's a much slower pace but more focussed and detailed than at a tutorial

For these students, using e-conferencing is a way of developing an interactive professionalism with their peers. Created through the dialogue of an on-line community their future professional lives as teachers are directed towards the centrality of continuing professional development, the importance of supportive relationships and a knowledge of how values relate to practice in schools.

The challenge of the collaborative learning environment

Currently we are carrying out research into different patterns of participation within the subject/phase rooms. Whilst there is a general expectation that students' active participation through social interaction with 'experts' and each other is one of the best ways to learn, the reality is that participation in all forums for discussion is problematic. Commentators (Kaye, 1989; Mason 1989), have argued that the establishment of on-line learning communities can help to overcome many of the problems of participating in conventional discussion groups since it "can provide a whole battery of electronic bridges and ladders to enable non-contributors to by-pass some of the conventional blockages: no powers of public oratory are required; no skills of interruption or loquaciousness are prerequisites; rapid exits from unpleasant situations are viable and, perhaps above all, no physical appearance or meeting is required. In short, CMC seems to offer an electronic mask to transcend a number of factors that tend to delimit participation" (Grint 1992). The practice of managing an on-line learning community is not so straightforward.

Within the Open University's pre-service course, 'participation' in the on-line learning community embraces the reading of messages as well as the contributing of messages. However, it is clear that whilst some students enjoy exploring their ideas through e-conferencing, (and each cohort produces it's own characters) tensions develop as the course progresses between the readers and the talkers.

"It (i.e. the Primary Room) does seem to be dominated by a few voices. They seem to get involved in these long, long messages and you can open a title which is called "Pythagorus" or something similar, and you find a one line message which says something like " Hi, yes, I know". ... and oh I don't have the time to plough through and track back to the original message."

(Primary pre-service student - 'Reader")

"We've just had a Day School last weekend, and I found it so frustrating. A lot of the time was taken up with discussing things which we had already discussed on FirstClass (the e-conference). I'm just sitting there thinking... well - if you'd logged on the you would know the answers to these questions and we wouldn't need to be doing this, we could be getting on with something else."

(Primary pre-service student - Talker).

"I'm a bit annoyed that people (i.e. other students) take all the help and don't give anything back... I now reply to people's mail boxes and they reply to mine and we set up our own mini -conference for those of us who are prepared to share our ideas."

(Primary pre-service student - Talker).

These messages indicate some of the challenges which face us in moderating on-line learning communities. Students can participate in them, but not all students want or feel confident enough to do so. In following up the reasons why students read rather than write messages we are moving to the following conclusions:

a. Participation is connected with the ease of access, but once logged on the level of students' ICT skills does not explain their different patterns of interaction.

b. e-conference writers themselves do value other writers' contributions and are anxious to encourage wider participation to such an extent that they will readily offer explanations and strategies to encourage other students. Generally these explanations focus on students' self-confidence:

"I think a lot of students are put off posting messages in case people think they are wrong... so they just come to the mailbox instead."

"I know some students would like to have more discussions about their TMAs (written assignments), but they are put off from posting messages because they think the tutor will think that they are asking for the answers...."

"I've spoken to some people in my tutor group about posting messages. They don't log-on every day and so when they do, there are so many messages and someone has already put up the thing they might want to say..."

c. Readers offer different explanations for their patterns of participation. The lack of time is a common complaint, together with the feeling that they are 'outsiders' in the larger discussion forums. Whilst finding their specialist room 'friendly', one student commented, "well it's friendly for those who post messages, but I'm not sure they would be friendly towards me." Among Readers the word 'clique' was selected to describe their subject room. Indeed this was also selected by about 50% of the sample of writers - aware that their own voices might discourage others posting messages.

As this case study shows, on-line learning communities have much to offer all pre-service teacher education courses. Whilst our current descriptions of the development of communities of practice offers a useful framework for analysing e-conferencing we must always be aware of the poverty of theory. Learning in a constructivist teacher education programme may be ' situated' - but so too is subjectivity. We need to recognise alternative student experiences positioned by class, race, gender, sexual orientation and linguistic diversity and to use the everyday experiences of students as a basis to develop our understanding of learning through e-discourse. As Butcher and Burgess (1998) point out gender, social class and culture all impact on the way in which subject knowledge is constructed in the classroom. From talking to our Primary students, it appears that they would prefer a clearly structured and timetabled curriculum within the subject/phase rooms, together with more active tutorial group discussions, rather than the open ended forum in place at the moment. Maybe than its time for us to redesign the desk top!.

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APPENDIX 1

Evaluation of FirstClass: History Room 96B.

Evidence Base.

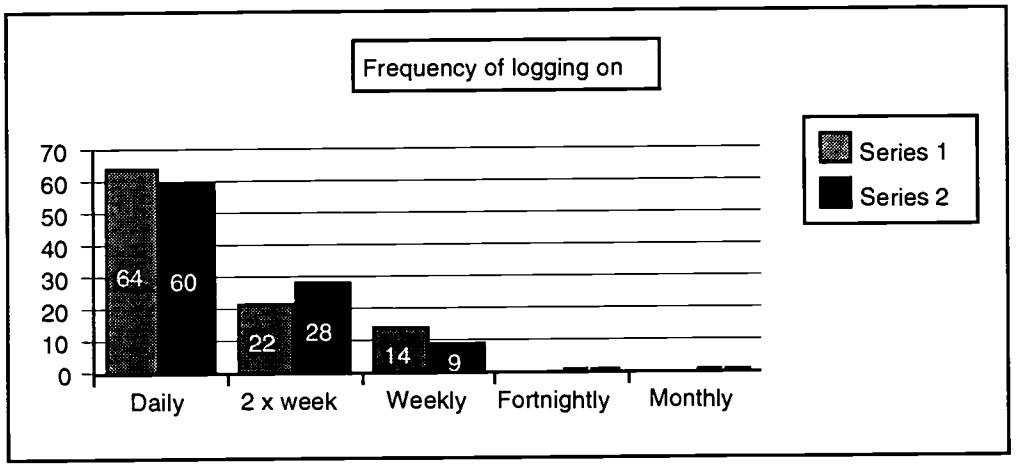
A national survey was carried out by questionnaire sent electronically to the 96B PGCE cohort.

125 students responded, of whom 14 were history students. This sample represents 9.85% of the 96B history cohort at the end of the course. Although a small sample, it is probably safe to say that it represents the opinions and preferences of those history students who were regular and confident users of FirstClass.

In addition to the information drawn from the National survey, an analysis has been done of the messages in the History room for the week 20/1/97 - 26/1/97 and the 'Guest Speaker' session held in the History room in November - December 1996.

Section A. National Survey Data.

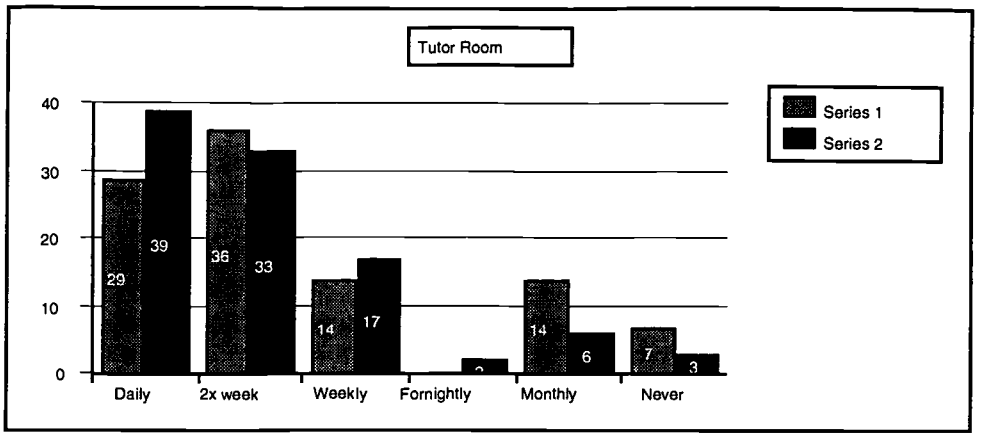
1. **Frequency of logging in to FirstClass.**

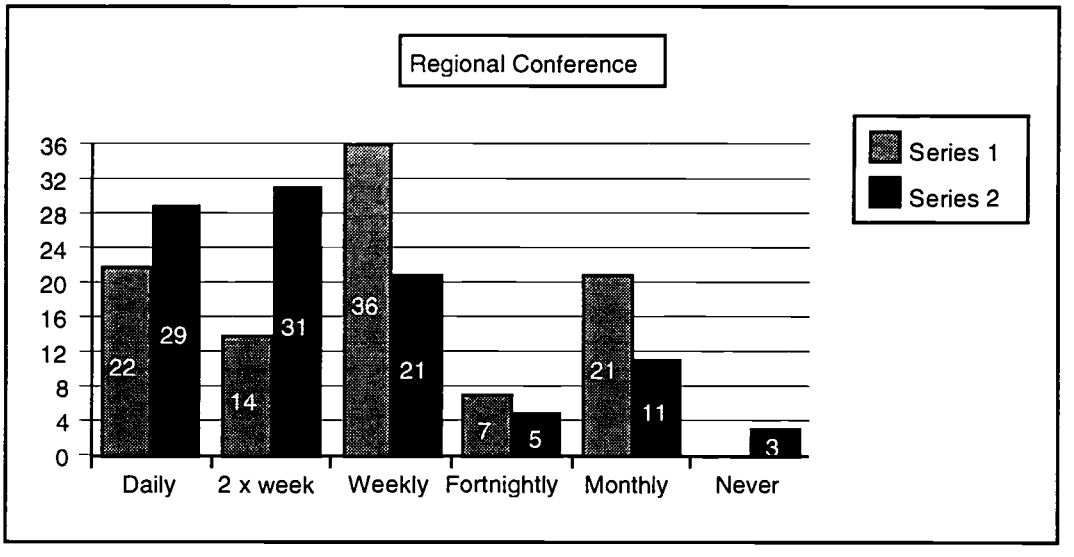


Series 1= %History Students.
Series 2 = %Total Sample

1. FCE888/96B HB.

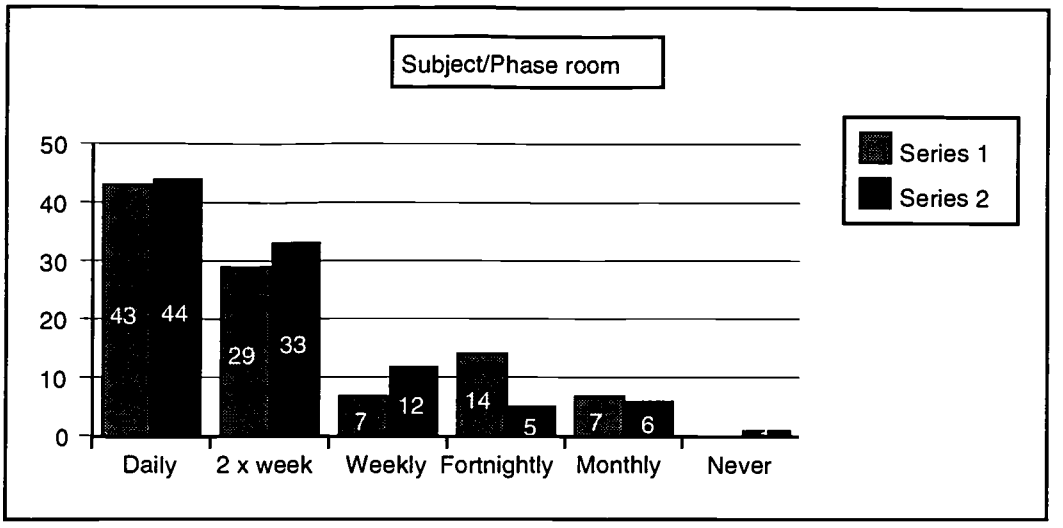
2. Frequency of reading messages in the different 'rooms' of FirstClass.



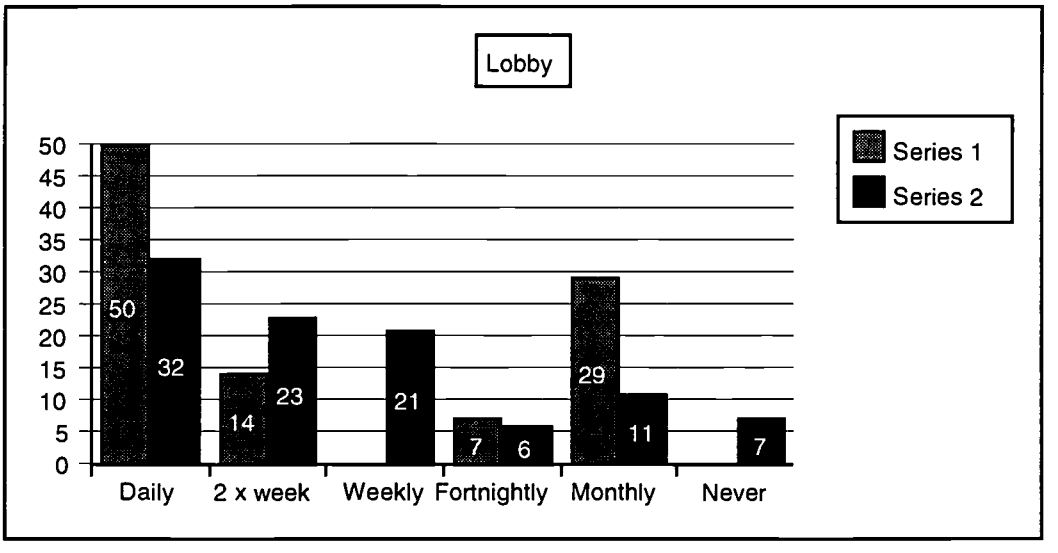


Series 1= %History Students.
Series 2 = %Total Sample

2. FCE888/96B HB.



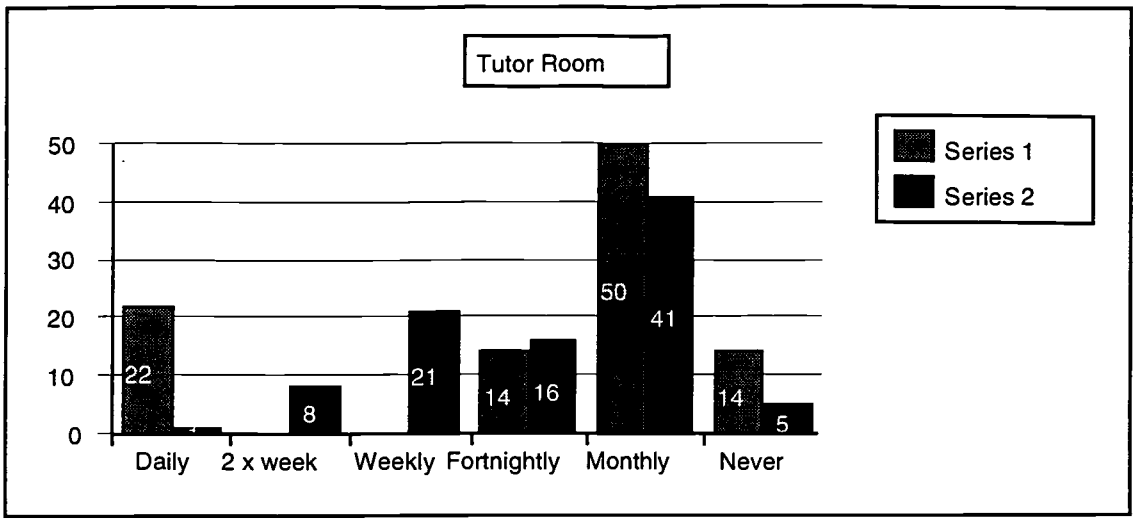
Series 1= %History Students.
Series 2 = %Total Sample.



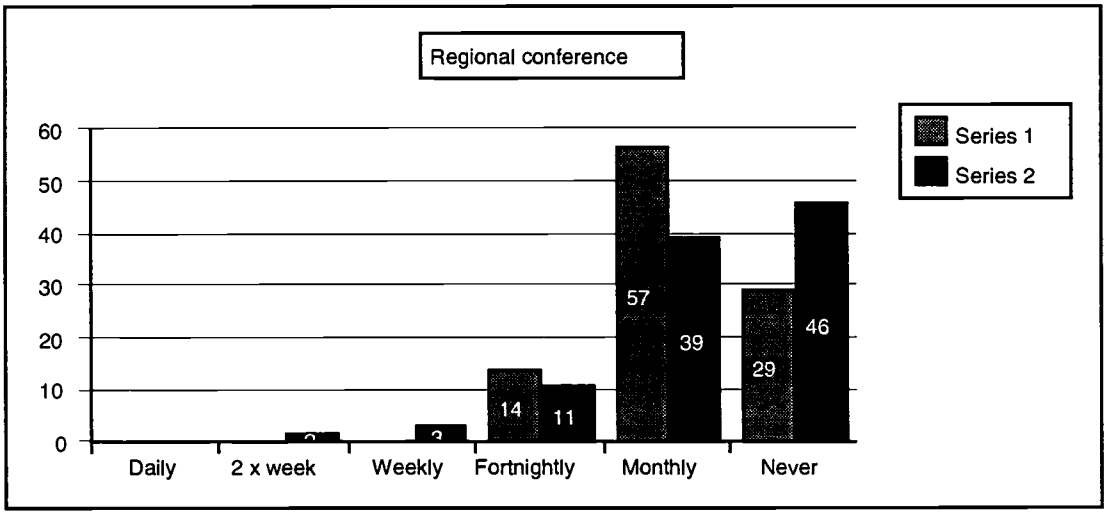
Series 1= %History Students.
Series 2 = %Total Sample.

3. FCE888/96B HB.

3. How often students contribute to the different 'rooms' in FirstClass.



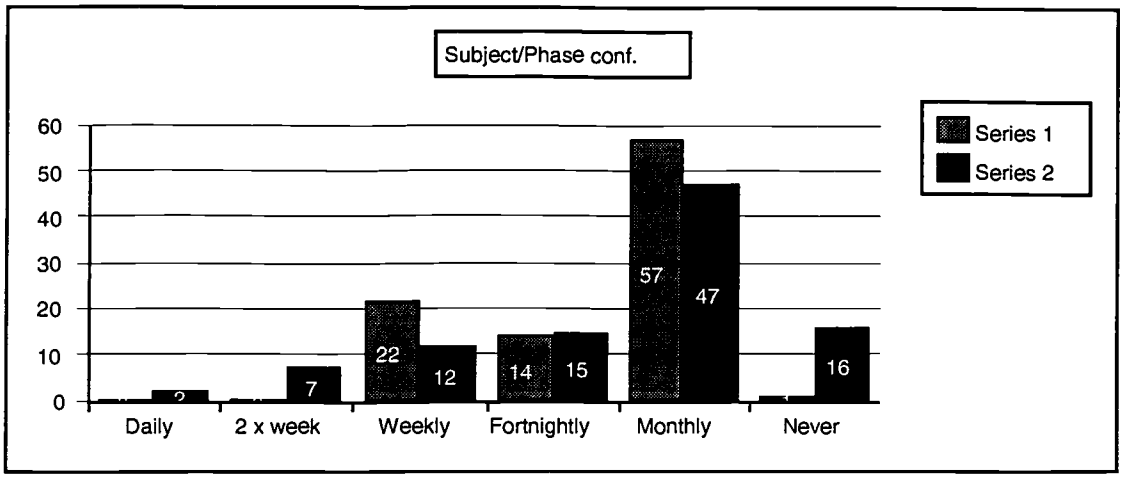
Series 1= %History Students.
Series 2 = %Total Sample.



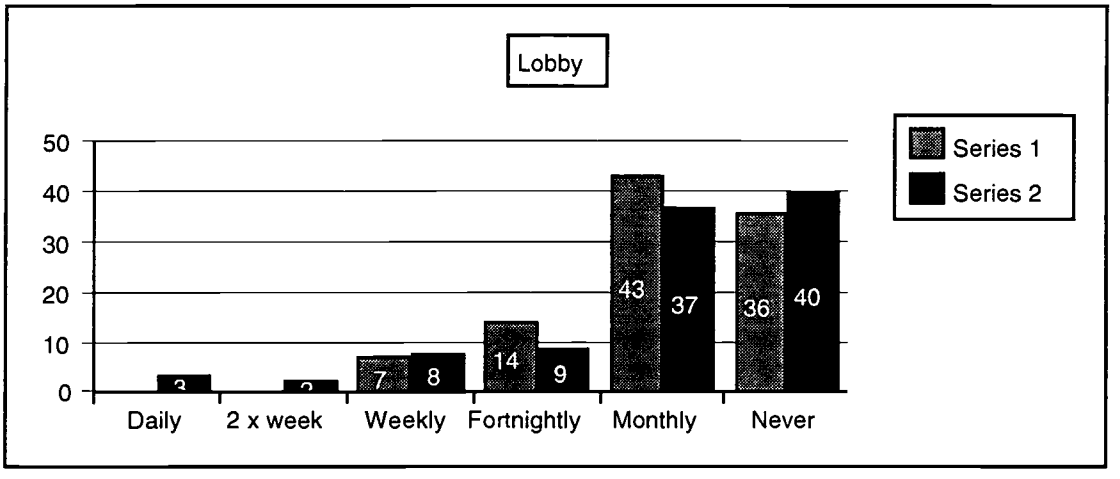
Series 1= %History Students.

4. FCE888/96B HB.

Series 2 = %Total Sample.



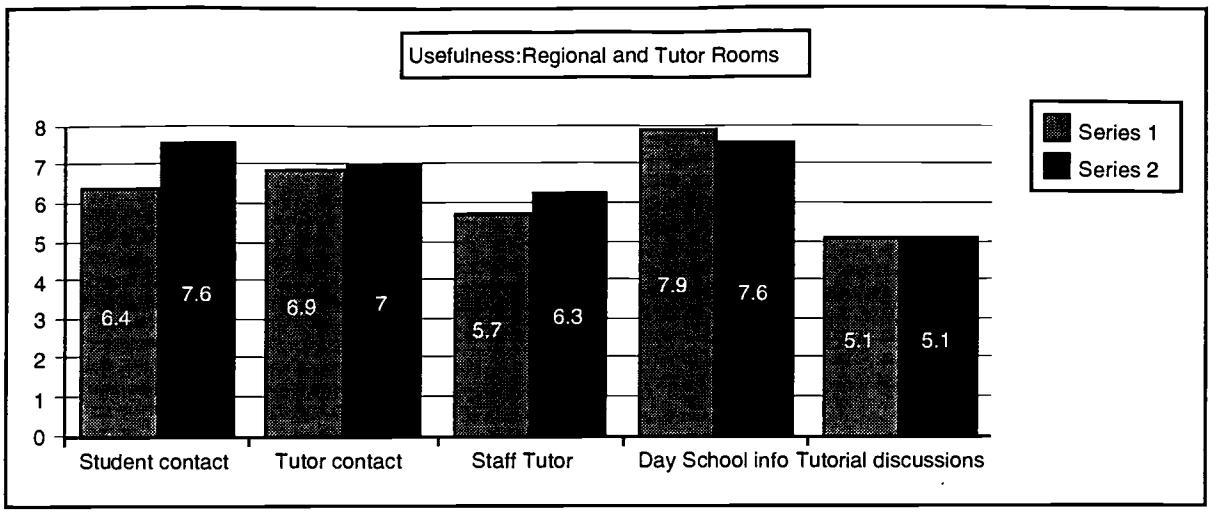
Series 1= %History Students.
Series 2 = %Total Sample.



Series 1= %History Students.
Series 2 = %Total Sample.

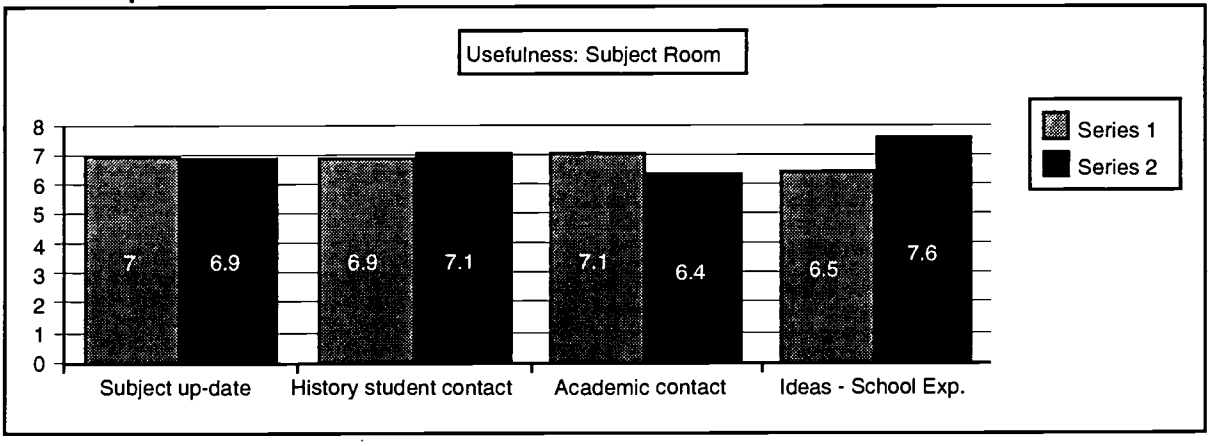
5. FCE888/96B HB.

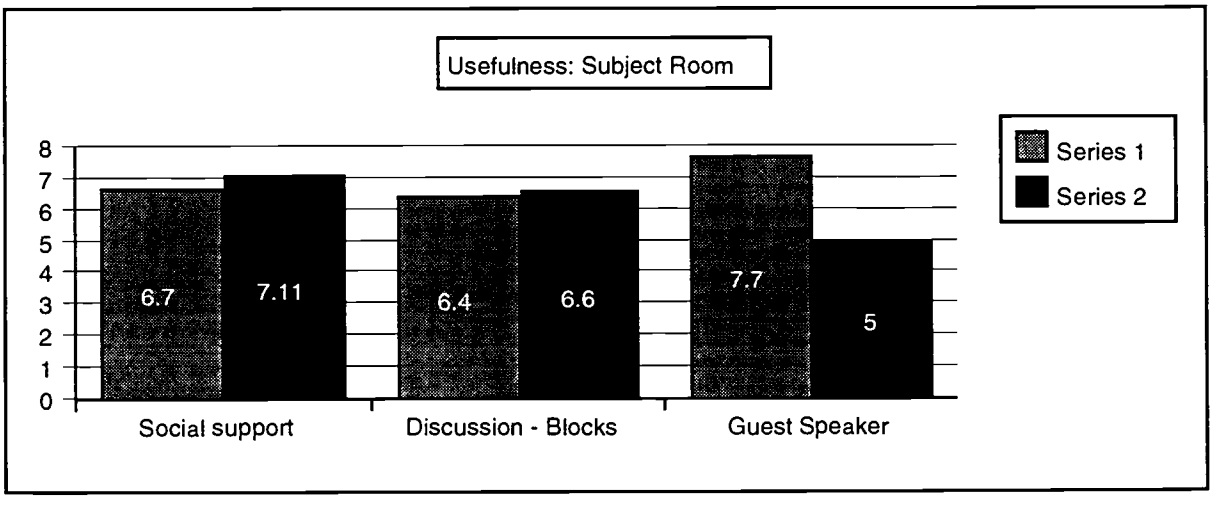
3. How useful the different aspects of the Regional and Tutor Conferences were on a scale 0=poor and 10= excellent.



Series 1= %History Students.
Series 2 = %Total Sample.

4.How useful the different aspects of the Subject/Phase Conferences were on a scale 0=poor and 10= excellent.



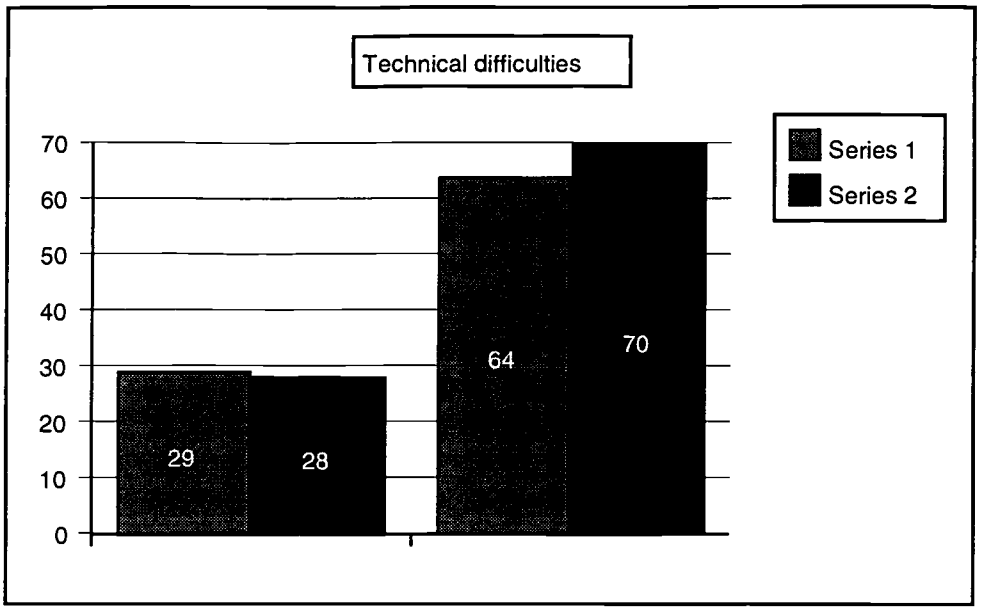


Series 1= %History Students.

6. FCE888/96B HB.

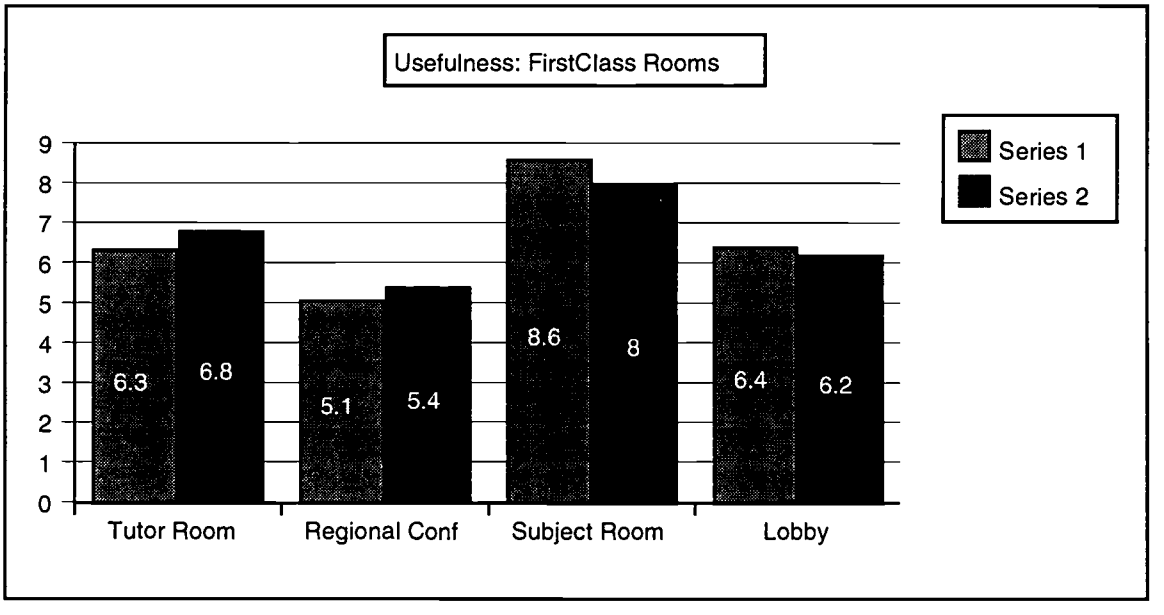
Series 2 = %Total Sample.

5. Technical Difficulties.



29% and 28% Had difficulties logging on to FirstClass.

6.How useful the different 'rooms' of FirstClass were on a scale 0=poor and 10= excellent.



Series 1= %History Students.
Series 2 = %Total Sample.

Section B : Analysis of use of FirstClass - Week beginning 20/1/97.

This information is drawn from the messages in the main History Room. At that time there were two sub-conferences - "Key Stage 1 and 2" and "Resources" in addition to the "Bulletin Board". These messages, together with their histories, have not been saved and are therefore not included in this survey.

1. Overall numbers of student participation.
Messages contributed 20/1 - 27/1 = 25.

Two of the 25 message histories have been analysed. This indicates that:
Message A had 86 Readers.
Message B had 70 Readers.

2. Students participating from History line:
17 messages from 12 History students. (ie 12/153 = 7.8% of E888 cohort at Stage 2).
5 female, 7 male (41.6% (59% total cohort) and 58.4 (41% total cohort)).

Message A = 48 history students (31.4%) = 26F and 22M (54% (59%) and 46% (41%)).
Message B = 32 history students (21%) = 19F and 13M (59% (59%) and 41%(41%)).

3. Students participating from other phase/line:
Other messages from Central Academic (1), Staff tutor(2), Tutor(2), Primary student(2) and English student(1).

Message A: Unknown 8, Tutors 5, CA1 (not including conference moderator), Primary 21, MFL 2, Ma1.

Message B: Unknown 9, Tutors 2, Primary 25, En 1, NQT 1.

5. Topics/areas discussed:

The majority of messages were requests for information and replies and exchanging resources:
• A-level History syllabus.

- CD-Rom extracts sent as attachment.
- Bayeux Tapestry.
- Request for clarification on Block 6 activities.
- Request for and resources for Food and Farming.
- Request for and resources for 1832 Reform Act.
- Request also cc to other rooms for info re Benelux students.
- History of Argentina.

Section C: Analysis of Guest Speaker Session. Ben Walsh (NCET) on IT and Teaching History. Nov-Dec 1996.

The history of the first Guest Speaker slot was analysed. This indicated that 107 PGCE History students read this message and downloaded the attachments. Of these 107 students, 8 subsequently withdrew from the course. The 99 students therefore represent 70% of the total History cohort.

Active participation in FirstClass - 70% - Reader status.
Gender(Readers) = 63.6% women (Total cohort 59%)
36.4% men (Total cohort 41%)

Contributors = 36 contributions from 26 contributors - ie 18.3% of the cohort.
Gender = 69.2% women.
29.8% men.
All the men made one contribution only, whereas four of the women made several - in terms of debating issues.

4 tutors made contributions.

In addition the following students participated in the Conference as Readers:
Lower Primary = 26 students.
Upper Primary = 66 students.
English = 5 students
Ma = 3 students
MFL = 2 students
Sci = 3 students
D&T= 2 students.

Conclusions.

• History Students who are competent in electronic conferencing rate the History room higher than other areas within FirstClass.

• Within the subject room, the Guest Speaker sessions and contact with the central academic are given the highest rating.

• Participation in the subject room, as both contributor and reader is high when the event is time tabled and structured, as in the Guest Speaker slot.

• Participation rates at other times is largely determined by students' need for information and resources, rather than to discuss aspects of the course.

• A significant number of Primary students - generally with History as their specialism, use the History room for resources and information.

• The majority of messages are read and replied to within 7 days of posting.

Hilary Bourdillon.
October 1997.

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