Student Self-Support in a Computer Mediated Communication Environment, at Postgraduate Level

Maria Fountana

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ABSTRACT

This dissertation is a study of the use of a Computer Mediated Communication environment to support peer interaction and self-help groups, in a postgraduate level at the Institute of Education. In the literature review the nature of learning has been discussed and the educational and social benefits of collaboration and cooperation have been pointed out. Different aspects of using CMC both synchronously and asynchronously have also been introduced. The online environment examined in this study existed independently to my involvement. The collection of the messages lasted for a five-month period of time and data was analysed both qualitatively and quantitatively. Additional data to support my analysis have been provided from fieldnotes, informal, and semi-structured interviews. The analysis revolved around three main areas: the way the environment was used, the "openness" and the "closure" of the environment, and the different positions established in the groups. Data analysis suggested that the online environment was mainly used as an online space for the publication of information, and as a supplementary, to the face-to-face environment, medium for communication whereas its socialising role was interlined. These findings were consistent to the literature. It was also suggested that whereas the environment has been "open" in terms of the content of the discussion, it has been "closed" in terms of membership. It was also indicated that members were taking up different positions in the groups inconsistently because of the informal character of the environment. It was finally suggested that the online environment was mostly used as a medium for the development of more in-depth arguments, in agreement with the literature, rather than with the development of more in-depth discussions, in contrast to the literature. At the end of this study it is suggested that the position of the administrator and the moderator may need to be pre-negotiated, a friendly and open-to-all environment needs be secured, appropriate software should be selected and first time users may need to be informed on how to use it.

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INTRODUCTION

This is a study with a developing interest in self-help groups and the development of Computer Mediated Communication systems in postgraduate courses, incorporating both Information and Communications Technology, and Education. In this paper the way and the level in which a self-initiated online environment for the promotion of peer support was used as a setting to facilitate collaboration, will be discussed.

In the literature review definitions of self-help and peer groups will be provided and several learning theories in favour of peer support will be introduced. The examination of the literature will initially aim at discussing the nature of learning: individualistic or cooperative.

In a further section of the literature review definitions for the terms collaboration, cooperation and communication will be provided and different aspects on the different benefits of collaborative learning over groupmates with different abilities, will be displayed. Finally, the use of CMC to promote collaboration will be discussed. Asynchronous CMC environments will be distinguished from the synchronous ones and the main advantages and disadvantages of each environment will be presented.

The online environment initiated to support peer collaboration examined in this study existed independently to my involvement. For ethical reasons, permission was requested by all members of the three online groups included in the sample of this study. All members granted permission in the promise of anonymity.

Messages from the three groups were collected over a five-month period of time and were analysed both qualitatively and quantitatively. Several

colleagues were interviewed both formally and informally. I also kept fieldnotes while participating in both the online and the face-to-face environment of collaboration.

The discussion of data will revolve around three main areas: the different ways in which the environment was used for, the “openness” and the “closure” of the environment and the different positions that colleagues established in the groups. The findings of this study are then discussed in relation to issues raised in the literature.

As a conclusion, the positive achievements of this study will be reprised, whereas the limitations will be pointed out. Finally, I will propose some ideas for the design and the implementation of a self-help environment to address next year’s cohort of students.

LITERATURE REVIEW

1. PEER LEARNING-PEER SUPPORT- SELF HELP GROUPS

Before introducing theories in support of peer learning, an effort to locate the origins and to provide definitions of the above terms will be made.

There are many psychological and sociological definitions of groups. McConnell (1994) has tried to define “groups” from an educational perspective. According to his definition “a group is a collection of individuals” (McConnell, 1994; p. 18) who share relations of interdependence not only in between them but also with other groups, consider themselves and are considered to be members of a group by non-members as well. Individuals within a group have identified roles and must fulfill the expectations they have of themselves or that others have for them.

Tindall (1995; p.10) defines “peer” as “a person who shares related experiences, values, and life-style” whereas Donaldson and Topping (1996; p. 7) define peers as “people who are involved in learning a particular subject common to them”. But what are the origins of peer learning and peer support groups?

Johnson and Johnson (-) locate the origins of cooperative learning in the words of Talmud, Quintillion, Seneca, and of Johann Amos Comenius. Topping (1998) seeks the roots of peer learning in the early practices of Judaism and in ancient Rome as well. Peer support is though, according to Kaye and Webb (1996), a new concept. Andrew Bell’s name is tightly associated with the early practice of peer learning and specifically with peer tutoring (Topping, 1998, Charlton and Kenneth, 1997). Bell, a school superintendent, was one of the first to realise the influence that students may have one upon another, and used students to teach other students in

1753 (Topping, 1988 cited by Kaye and Webb, 1996). Joseph Lancaster, later, developed what Bell had started and spread his ideas to America. According to Johnson and Johnson (-), Colonel Francis Parker and John Dewey have been Bell's and Lancaster's followers.

Damon (1984; p. 331) distinguishes two different forms of peer learning, "peer tutoring" that facilitates the transmission of information and "peer collaboration" that facilitates the acquisition of knowledge, whereas Donaldson and Topping (1996) distinguish five, cooperative learning, peer tutoring, peer monitoring and assessment, paired collaborative writing, and mentoring and counseling. Charlton and Kenneth (1997) define peer support as "those planned practices when children are designated with- and often receive more formal training to undertake- a defined responsibility to offer a learning experience to one, or more, of their peers" and identify several different forms of peer support such as peer tutoring, peer counseling, buddying programmes, paired reading, collaborative teaching and peer leading.

Cowie and Sharp (1996) cite Carr who argues that there are over thirty diverse forms of peer groups that support different scopes. The most important are: peer tutoring, peer counseling and befriending (Lanza, 1999). Other types of peer assisted learning are: peer assessment, syndicate learning, group projects, games and simulations, self-directed student groups, student presentation and mentoring (Topping, 1995; p. 58), and peer helping (Tindall, 1995).

Peer learning has been mostly adopted "by practitioners in community education, youth work, and health promotion" (Kaye and Webb, 1996) and has been extensively used in the field of sociology, psychology and education for different reasons. Cowie and Sharp (1992) provide a paradigm of the use of support groups against bullying, James et al (1991) present a paradigm of peer support for teaching spelling, Tindall (1995) provides a paradigm of the use of peer support for people with psychiatric problems. He argues that self-helping groups have been proven helpful for

the maintenance of a healthier behaviour and of a generally less stressful life. Belle in his book “Children’s social networks and social supports” (1989) explains the use of peer support groups for social support. Finally, peer support is used among students for the improvement of academic learning (Charlton and Kenneth, 1997). Hmelo et al (1998) describe a case study of peer support through an online environment that was initiated to support traditional composition, and later to facilitate collaboration among students when working on assignments.

Bingham and Daniels (1998 cited by Lanza, 1999) define peer support groups as groups of students that attend the same year at school or at University, meet, cooperate and support each other academically, emotionally and socially. In peer support groups students help each other in many ways, e.g. by discussing - discussion groups - (Paulsen, 1995), by encouraging, by assisting (Johnson and Johnson, 1998), by decision making, by working together collaboratively either face-to-face or online (Paulsen, 1995) and generally by helping improve the quality and quantity of their peers’ learning.

Peer support groups are either formal or informal. It is not uncommon for students when attending full time courses to form informal peer groups to facilitate their studies (Bingham and Daniels, 1998). In most cases though within support groups it seems that a person acting as a teacher/facilitator, or a teacher/tutee (Slavin, 1995) is needed. Within online environments this “facilitator” is commonly called moderator (Berge and Collins, 1995). The roles of the moderator are very complicated and extend from simply offering technical support to encouraging and motivating participation, managing the online interaction and facilitating social relationships within the online environment (Salmon, 2000, Salmon, 1998, Salmon and Giles, 1997, Preece, 2000)

In a paradigm of the use of peer support in an online environment within higher education Baker and Dillon (1999) built a web site and joined first and second year undergraduate students with “successful” students from

previous years, who acted as “peer supporters”. At this communal space, students had the possibility to send their own messages to colleagues from previous years and receive responses in relation to their understanding of the course tasks etc. Another example is provided by Shaw (1991) who used an “outside consultant” to facilitate peer support groups in a face-to-face environment.

Thomas (1998) describes the case of the use of an online environment in the Introduction to Information Technology course in the Open University, to promote self-help in between students and tutors, to facilitate collaboration and “team-teaching” as well as to raise the value of the tutor’s teaching role.

Cowie and Sharp (1996) argue that most participants of support groups are initiated by the natural willingness within every individual to cooperate with another friendly person. Finally, Bingham and Daniels (1998) distinguish four different stages that members go through when entering a group, the forming stage, the storming stage, the norming stage, and the performing stage.

2. THEORIES IN SUPPORT OF PEER INTERACTION - THE NATURE OF LEARNING

2.1 The developmental perspective on learning

Mason and Kaye (1998b) argue that “learning - although a very personal matter - must never be an individual matter - one learns best by and with others”.

Although Bruner (1986, p.127) had initially adopted a theory “very much in the tradition of the solo child mastering the world by representing it to himself in his own terms” he later made a “completion” to his theory by recognising that learning is mostly a “communal activity”.

Damon (1984) defines three different theoretical traditions that underline the importance of peers for child development: the traditions that were formed after Piaget’s, Vygotsky’s and Sullivan’s theories.

2.1.1 Piaget’s constructivism

According to Piaget “children are actively constructing their own understanding of the world” (Crook, 1994; p.58). Peer interaction is very important because of the “constructive feedback” that peers can give to each other.

> …we want to claim that cooperation is opposed both to autism and constraint. It progressively eliminates the processes of autistic or egocentric thought thanks to those processes we have just mentioned. Discussion procedures internal reflection; mutual verification produces the need for proof and objectivity. The exchange of thought presupposes the principles of contradiction and identity conceived as regulative of discourse, etc. as for constraint, cooperation destroys it to the extent that there is a differentiation of individuals and free discussion. (Piaget, 1995; p.208).

According to the Piagetian approach, cooperation is possible under certain conditions. Firstly, children must have reached a certain developmental level, although it is not clear which level of development would be satisfactory for cooperation to be successful (Perret-Clermont, 1980; p. 19-20). Secondly, there must be an egalitarian relationship between peers. When the members in a relationship are equal between them, there is respect. There is a difference in the relationships between children and adults and in between children. A child can never be equal with an adult in a relationship (Perret-Clermont, 1980; p. 19-20).

Cooperation between peers can result to mental growth when there is a conflict. “The notion of conflict appears as an essential element in the study of the mechanisms of cognitive development” (Perret-Clermont, 1980; p. 31). A cognitive conflict occurs when a child discovers that his or her belief conflicts with that of another peer. The elaboration of such a conflict can result in change. Cognitive conflict can motivate a child to rethink and reestablish his/her beliefs. On the other hand, cognitive conflict has social benefits for peers since it improves communicational skills and helps them realise the cognitive differences in between people (Damon, 1984).

“Cooperation is exclusively a method”, according to Piaget (1995; p. 208), a method that initiates a procedure, which leads to cognitive development. The outcome, mental growth, is the result of the child’s internal elaboration. Peer interaction does not offer the final “product”. The individual reconstructs the understanding of the world on its own. This is a main difference between the Piagetian and the Vygotskian approach, as it will be discussed later in this paper. Piaget did not neglect the influence of social interaction on cognition. Limited emphasis was given though on the “social” within his theory (Crook, 1994; p. 57). Consequently, Piaget’s theory was accused, by for example McConnell (1994; p. 27) as egocentric and individualistic.

What Piaget answers directly to Wallon who accused him of egocentrism, is that “society” or “social life” are insufficiently “precise concepts to be employed in psychology” (1995; p. 278). Piaget defines egocentrism in childhood as “the unconscious confusion of one’s own point of view with that of the other” (Piaget, 1995; 279-280) whereas Wallon, as understood by Piaget, refers to the social “in the sense that the child does not manage to differentiate his ego from actions exercised upon it by its surroundings” (Piaget, 1995; p 283).

Piagetian theory has influenced the theory of computer-based-learning. The “limited interpretation” of the Piagetian theory though has led to paradigms where the social context has been neglected (Crook, 1994; p.58).

2.1.2 Vygotsky’s socio-cultural approach

Whereas Piaget’s theory starts from the individual and proceeds to the social, Vygotsky’s theory starts the other way around (Crook, 1994).

In his “Zone of Proximal Development” Vygotsky distinguishes the child’s development into two different developmental levels. He names the first one “actual developmental level” and defines it as “the level of development of a child’s mental function that has been established as a result of certain already completed developmental cycles” (Vygotsky, 1978; p. 85). The second level is “the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978; p. 86). The distance between those two levels is what Vygotsky calls the “zone of proximal development”.

According to Vygotsky, the impact of the social is fundamental for the child’s development. Children’s potential to learn through collaboration can benefit greatly from the interaction with peers. Dialogue is very important for the exchange of ideas and the understanding of the world and can

stretch the child's own cognition. When repeatedly interacting with peers children internalise what they learn from experience and this can influence positively the development of their conceptual skills. Learning from peers can narrow the distance in between the two developmental levels in Vygotsky's ZPD. Individual conscious proceeds from the social, which comes in advance.

> An interpersonal process is transformed into an intrapersonal one. Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first between people (interpsychological), and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relations between human individuals. (Vygotsky, 1978; p.57)

Another difference between the Piagetian and the Vygotskian theory is that whereas according to Piaget all peers can contribute beneficially when interacting with each other and can equally benefit from this interaction, since children learn from the similarities and differences they discover in between them, for Vygotsky positive interaction happens with a more capable peer (Schacter and Fagnano, 1999).

2.1.3 Sullivan's psychiatric point of view

According to Damon (1984) Sullivan's perspective on child's development constitutes another theory that underlines the importance of peer interaction. According to Sullivan, peers do not imitate one another like they would with adults. On the contrary, when children collaborate with equals, they co-construct knowledge.

> Peers benefit from one another because they share ideas, seek consensus, compromise willingly with one another, and remain open to new insights generated in a peer dialogue. (Damon, 1984; p.334)

2.2 Other perspectives on cooperative learning

Besides the developmental perspective, there are others in support of cooperative learning as well (Slavin, 1995).

2.2.1 Motivational perspectives

According to Slavin (1995), rewards and goals encourage learning. Cooperative environments facilitate learning because they set goals that members aim to meet. Within groups a successful outcome is the product of the team and not of an individual. Slavin argues that:

> The fact that their outcomes are dependent on one another's behavior is enough to motivate students to engage in behaviors which help the group to be rewarded, because the group incentive induces students to encourage goal-directed behaviors among their groupmates (Slavin, 1995).

Slavin's emphasis on motivational factors has been criticised. Meloth and Deering (1992) argue that more emphasis is attributed to other factors (e.g. extrinsic rewards) and not to academic ones and claim that these factors may not actually be important when students use learning strategies during collaboration. Although Damon (1984) recognises that some evidence is provided to support Slavin's emphasis on rewards, he is hesitant about the way such rewards can affect long-time progress.

2.2.2 Social cohesion perspectives

The social cohesion perspective is similar to the previous one. However, motivational theorist argue that group work promotes learning since, to achieve their personal goals, group members will help each other in order to achieve personal goals. In contrast, social cohesion theorists claim that group members will help each other because they care about their groupmates and about the group (Slavin, 1995).

2.2.3 Cognitive elaboration perspectives

Cognitive theorists support neither the motivational approach nor the social cohesiveness perspective. According to Slavin (1995), there is also the cognitive elaboration perspective, besides the developmental viewpoint that has already been discussed in this paper. According to this perspective, individuals need to “elaborate” knowledge, to keep it in long-term memory. The best way to do that is to explain this material to somebody else. Therefore cooperation within groups has shown to be very valuable for learning.

From this final perspective, arises a new issue for discussion: who benefits more from cooperative learning? Firstly though there is a need to define the terms collaboration and cooperation.

3. COLLABORATION-COOPERATION-COMMUNICATION

Although the terms cooperation and collaboration have already been extensively used in this paper, no definition has been provided to draw a distinction between them. This is not so simple as Kaye (1991) suggests, since there are no globally recognised definitions and the same undistinguished use of those terms is made within literature as well (Hall, 2000).

According to McConnell (1994; p. 12) “cooperative learning is a fairly new concept”. He cites Argyle (1991; p. 15 cited by McConnell, 1994) to define cooperation as “acting together, in a coordinated way at work, or in social relationships, in the pursuit of shared goals, the enjoyment of the joint activity, or simply furthering the relationships”. According to Argyle’s theory there are three reasons to cooperate: to receive extrinsic rewards, to make new friendships or simply to share an activity with other peers. McConnell (1994) though recognises that this is a broad definition.

He adopts two views of cooperative learning. The first one describes collaboration in the way it occurs commonly in the compulsory education, especially of USA and Israel but also in higher education, which is curriculum based and influenced by behaviorism. Students need to be motivated with external rewards to cooperate and cooperation takes place under the “surveillance” of a teacher who defines the educational goals himself (McConnell, 1994). The second one is defined as:

> …a form of open, negotiated learning. Within post-compulsory education, it has a history in the humanistic approach to education (e.g., Rogers, 1969) and in the self-directed approach to learning (Knowles, 1975). This approach emphasises internal moderation by learners themselves. It is problem-or issue-based. Learners learn largely through intrinsic motivation, and rewards are largely intrinsic. There is little if any “policing” by a teacher or tutor. There is much choice by learners in decision making and in group processing. (McConnell, 1994; p. 23)

Wegerif (1998) in agreement with this definition argues that students should have opportunities to structure their own learning.

To Johnson and Johnson cooperative learning is “the instructional use of small groups so that students work together to maximise their own and each other's learning” (Johnson, Johnson, & Holubec, 1998 cited by Johnson and Johnson, 1998). They make a distinction between formal, informal cooperative learning groups and collaborative base groups (Johnson and Johnson, -).

Kaye (1991) on the other hand, argues that collaboration is about working together with other people, sharing the same goals and “adding value” to an activity. He distinguishes this from communication where, according to him, nothing greater happens than a simple exchange of information. Kaye defines collaborative learning as “the acquisition by individuals of knowledge, skills, or attitudes occurring as the result of group interaction, or put more tersely, individual learning as a result of group process” (Kaye, 1991; p. 4). He distinguishes this from group learning, group performance and organisational learning.

No strict distinction has been made though between cooperation and collaboration so far. Tiessen and Ward (1997) try to distinguish these two terms by clarifying that collaboration is a superior activity compared with cooperation. When cooperating, peers share the same goals but act independently on their own tasks or on the same task but each one individually on a separated assignment, as argued by Galton and Williamson (1992). However, when collaborating, although peers cooperate, they also work together on a common task towards a common outcome (Tiessen and Ward, 1997, Galton and Williamson, 1992). Tiessen and Ward cite Schrage (1990) to refer to two main characteristics of collaboration. Firstly they suggest that during collaboration something new is created that could not have been created otherwise (e.g. by an individual only). Secondly they argue that collaboration must take place

within a “shared representational space, where all participants can contribute to the new communal artifact” (Tiessen and Ward, 1997; p. 178). Communication is the exchange of information and is a prerequisite both for cooperation and collaboration to happen.

However, the importance of communication should not be undermined. Nalley (1995) describes his experience of the use of CMC in a 25-student-class, in Foundations of Education at the University of Maine at Fort Kent and argues that his decision to include CMC in the course was triggered by the realisation that “improved communication” (Nalley, 1995) was needed.

As long as a non-competitive environment is secured, without relations of interdependence between people and where constructive feedback is offered, collaborative learning does not need to happen within a group according to Kaye (1991), contrary to Johnson’s and Johnson’s (1998) point of view. Furthermore, as Kaye (1991) and Johnson et al (2000) suggest collaborative learning may not and will not always be successful.

McConnell (-) noticed that in his study there were periods of increased activity within the online group as well as periods of decreased activity, periods of high-level cooperation and periods of lack of communication. This suggests that, even when collaborative learning is successful, there are still instances of total lack of collaboration. Although the development of the group in his study was not similar to any other known model, McConnell (-) distinguished a “start”, “middle” and “end” period of the online groupwork.

There are several circumstances that may restrict successful collaboration in an online environment. Hmelo et al (1998) attribute the groups’ low

achievements in their study to three parameters: access problems, hardware platform incompatibilities, and failure to integrate sufficiently CMC into the course. Wegerif's (1998) opinion about access problems influencing members' performance coincides with that of Hmelo et al (1998). Finally, Nalley (1995) argues that a fundamental parameter for successful online groupwork is the level at which tutors will convince their students of the value of CMC to prevent them from perceiving collaborative systems simply as "technological game playing" (Nalley, 1995; p. 14).

Kaye (1991) points out some circumstances under which collaboration can be non-functional, or difficult to practice, especially within traditional education, and McConnell suggests that even when collaboration is successful there are still periods of inactivity. However everybody agrees that collaboration provides several educational benefits. The engagement in "problem-solving", in "discovery-learning", in "exploring new horizons" (Damon, 1984), in "decision making" (Johnson and Johnson, 1998), in "sharing different perspectives" with peers (Meloth and Deering, 1992), in reaching a "deep level of understanding" (Kaye, 1991, Meloth and Deering, 1992), in "actively" participating in learning etc. constitute some of these educational advantages.

Wilson and Whitelock (1997) organised the messages sent by students, among others, in the following categories: problem solving (Steeples et al., 1996, Wilson and Whitelock, 1997), contact with tutors, exchange of news and information, exchange of course material, support to the students that missed a lesson (Steeples et al., 1996, Wilson and Whitelock, 1997), online discussions, support on the assignments, revision, web access, socialisation, etc.

The social advantages of collaboration are widely cited in literature for helping peers taste feelings of "psychological success" (Johnson and Johnson, 1998). As Piaget and Sullivan suggest, collaboration inspires

feelings of respect, “empathy, kindness, and a sense of justice” (Damon, 1984) and encourages the development of friendly relationships (Johnson and Johnson, 1998) in between peers.

In his ethnographic study of the Teaching and Learning Online (TLO) course offered by the Institute of Educational Technology at the Open University, Wegerif (1998) underlines the importance of the social dimension for successful online groupware. In his paper, he presents a model of unstructured collaborative learning, initiated by the students’ need to share course-related problems with peers and puts emphasis on the importance of forming a community. He suggests that students’ diverse backgrounds and origins make it harder for a community to be formed. Within his study, he uses the terms “insiders” and “outsiders” to describe students’ feelings.

4. WHO BENEFITS FROM COLLABORATIVE LEARNING?

Usually groups are composed of students of different ability level (Galton and Williamson, 1992). One main subject of discussion in literature has been whether cooperation promotes higher achievements in itself or whether less capable peers benefit more than more capable peers (Skon et al., 1981).

High level achievements depend on several characteristics such as the composition of the group, the personality and the behavior of members, the structure of the tasks (Webb, 1989), the groupsize (Galton and Williamson, 1992) etc. Who benefits though more from groupwork and peer collaboration?

McConnell (1994) argues that everybody benefits from cooperation. Progress can be made for both those who help the others and those who are being helped (Charlton and Kenneth, 1997). Galton and Williamson (1992) argue though that when there is not a “matching” composition within a group, cooperation is not very effective and it can “stigmatise low achievers” (Blumenfeld et al, 1996). As argued by Blumenfeld et al (1996) for a successful composition of a group, members from high and middle or middle and low achievement levels are preferable.

Cohen (1994) suggests that low achievers undoubtedly benefit from cooperation under any circumstances within a group. What about high-ability students then? Perret-Clermont (1980; p. 27) argues that “the child who is already relatively more advanced can progress just as much as the less advanced child, in a situation in which two children are finding ways of coordinating their activities”.

According to Laughlin (1978) high-ability students benefit more when they cooperate with other high-ability students than when they work with medium or low-ability students. “However, different high-ability members contribute a large amount of unique or complementary information to each other, so that high-ability persons working together perform better than they would alone” (Laughlin, 1978; p.116). Damon (1984) seems to agree with Laughlin when he cites Doise (Mugny and Doise, 1976 cited by Damon, 1984) who argues that when students with different cognitive strategies cooperate they benefit more than when students with the same cognitive strategies work together.

Finally, Meloth and Deering (1992) argue that within a group those who benefit more are those who elaborate information when explaining it to other students since, as claimed by Slavin (1995), this is the best way for someone to keep knowledge in long-term memory.

5. COLLABORATIVE LEARNING AND COMPUTER MEDIATED COMMUNICATION

Nipper (1998) distinguishes two models as ancestors of communication technologies: correspondence teaching (in printed material), and multi-media distance teaching (in both printing material and broadcast media, cassettes etc., partly computers, and telephone counseling, including some face-to-face tutorials). These two first generations of distance learning provided one-way or two-way communication. Social discriminations were unavoidable though at these first stages of distance education, since they appealed mainly to more “educationally privileged students”. “However, communication, and learning as a social process, will be the key elements in the conceptual development of third generation models of distance learning” (Nipper, 1998).

5.1 Definition and benefits of CMC

Collaborative technologies are information technologies that emphasise on groupwork and on peer interaction (Marjanovic, 1999) and according to Berge (1995) encourage “self discipline” and responsibility for one’s own learning. Paulsen (1995) defines CMC as the “Transmission and reception of messages using computers as input, storage, output, and routing devices”.

Seaton (1993, cited by Paulsen, 1995) argues that CMC has the potential to promote collaborative learning and cooperation as well as self-directed learning. “The primary use of CMC was to support peer communication and professional development, and to enhance curriculum-based classroom activities” (Teles and Duxbury, 1991; p. 50 cited by Paulsen, 1995). Communication and interactivity are considered essential factors

for learning. Technologies that facilitate these processes, promote collaborative learning. Since collaboration is considered to be a key concept for the construction of knowledge (Blumenfeld et al, 1996) collaboration technologies can be proven very beneficial for learning.

According to Koppi et al (1997) Computer Supported Cooperative Learning (CSCL) offers one-to-one and one-to-many communication and promotes cooperation in groups, especially for distance learners. CMC is tightly connected to both distance education and “full time residential higher education” (Mason and Kaye, 1989 cited by Marjanovic, 1999).

Moore (1991 cited by Lauzon, 1992) emphasises the role of CMC for distant learners who have the opportunity to overcome the isolation associated with distant learning by entering a community where they can interact with both other peers and their tutors. There are several different categories of people that could be considered “distant learners”. Distant learners may be students dispersed all over the globe, or part time students who have difficulty getting on to campus frequently (Steeples et al, 1996). Similarly, they might be people who need to stay at home because of childcare, lack of transportation, disability or simply because they prefer to have access from their homes (McConnell and Hammond, -).

CSCL has influenced pedagogy in many ways. The teacher/trainer is no longer an imparter of knowledge but more a facilitator of knowledge with restricted authority. The learning approach is student-centred. Students become more involved in their own learning. They have the potential to contribute meaningfully to the group, by contacting their peers, having online discussions, suggesting links on the web etc. (Koppi et al, 1997). According to Koppi et al (1997) communication technologies are most beneficial “as a communication medium for student collaboration, as an information resource, a search tool and as a medium for publication”. Berge (1995) though foresees a danger for those students who are not

ready to take responsibility for their own learning and need a more structured environment.

To conclude, Singletary and Anderson (1995) consider peer support as the most important benefit of communication technologies.

5.2 Categories of CMC

It has already been discussed how collaboration technologies, designed for peer support and peer interaction, are known by several names e.g. CMC, groupware, and Computer Supported Cooperative Work systems (CSCW), which is a useful name according to Rodden (1991 cited by McConnell, 1994) when connecting it with CSCL etc.

There are two main categories of CSCW systems, synchronous and asynchronous. They are classified in relation to two main characteristics of such systems, the location of the users and the method of the interaction (Marjanovic, 1999 and McConnell, 1994).

Synchronous collaborative technologies can either be same-time, same-place (co-location) or same-time, different-place. Interaction can take place in written or oral form since tools of synchronous online programs facilitate text based interaction as well as video conferencing (Marjanovic, 1996) and can be very stimulating, motivating and fun. It can be proven difficult though to keep up with the pace of oral discussion similarly to a face-to-face conversation, or to develop an in depth argument, as suggested by McConnell and Hammond (-).

Asynchronous collaborative technologies are any-time, any-place systems and therefore provide flexibility and convenience in terms of time and location of access (Mason, 1998). One of the main advantages of asynchronous collaborative technologies is that they provide time for reflection on textual communication and for background research on the

subject of discussion before responding (Steeples, 1996, Koppi et al., 1997, Marjanovic, 1999) and offer the opportunity to participants to engage in in-depth discussions (McConnell et al., -).

However, in McConnell's (-) paradigm of the use of CMC in an MA in Management learning for part-time adult learning at the University of Sheffield, the researcher observed that there were times that messages were neglected or comments were delayed in a way that made it difficult to follow the sequence of the discussion. This was despite the fact that the asynchronous character of the online conference was particularly convenient for many participants,

McConnell (1994) cites Rodden who argues that there can be another category of CSCW systems, in relation to their structure, the structured and the unstructured groupware.

Structured groupware has a very clear and predefined structure and refers mainly to people who work electronically together in organisations. Structured CSCW are designed in a way to facilitate the specification of aims, goals, procedures, outcomes etc. and can be used for "Document editing…Team (or group) development…Workgroup communication management" etc. (McConnell, 1994; p. 34). They are still though in their infancy and evaluation especially in the educational domain (McConnell, 1994) is very difficult.

Unstructured CSCL systems, contrary to the structured provide the opportunity to users to organise them themselves in the way they prefer. This term refers to any form of collaborative learning groups that communicate over a network.

However, although the informal use of online groups has already been discussed as a beneficial environment in adult education where learning is "self-directed" and members undertake "internal moderation", the need for "online contracts" is underlined in the literature (Winograd, 2000, Berge

and Collins, 1995). McConnell (-) also points out the importance of the online “cooperative learning contract”. Although some informal decisions had been made prior to the beginning of the online groupwork, in his study, there were things that needed negotiation during the online period. The same realisation was made about the participants’ roles. Members of the group had elected a “manager”. During the groupwork though participants started adopting specific positions in the group that had not been negotiated before such as questioner, lurker, observer, information giver etc.

5.3 Tools of CMC environments

CMC includes computer conferencing, electronic mail, bulletin boards and generally the possibility of storage and retrieval of data.

5.3.1 Computer conferencing

This is a many-to-many tool of collaboration systems that allows communication between members of a group. Individuals send messages to a communal space where all members of an electronic conference have access (McConnell and Hammond, -, McConnell, 1994). Users can respond to these messages or add new ones and form “threads”. Conversations developed in this way are stored permanently within the system. Messages can be read linearly or in other ways convenient to the user (McConnell, 1994). Threading has drawn the attention of researchers (Wegerif, 1998) as an important element for the development of discussions. Wegerif (1998) in his analysis refers to the problematic threading of the online environment used in his study. However, it seems that members of the online environment were not influenced from the problematic threading of the software. Finally, computer conferencing can be both synchronous and asynchronous.

5.3.2 E-mail

E-mail facilitates one-to-one and one-to-many communication. Despite its technical resemblance to computer conferencing it is different in that whereas e-mail is totally controlled by the individual, computer conferencing is controlled by its organiser. The use of e-mail has been proven very beneficial in higher education (Soler and Lousberg, 1996) since it allows the exchange of information and data in between students (Blumenfeld et al., 1996, Steeples et al, 1994) and facilitates support from local and/or international tutors (Steeples et al., 1996).

5.3.3 Bulletin boards

Bulletin boards are communal spaces where individuals can put their messages. All members of a conference can read them and even though each one can put his/her own message on the board, this is mostly a tool for “displaying” (McConnell, 1994) information rather than communicating.

METHODOLOGY

This is an ethnographic study of an online environment, which existed prior to my involvement. In this part of the paper the sampling techniques will be discussed as well as the methods of data collection and the approaches to data analysis.

1. SAMPLING

According to Brown and Dowling (1998; p. 29) “the selection of empirical setting is very often a matter of seizing an opportunity”. The fact that the online environment examined in this study was independent and existed prior to my involvement constitutes my sample as “opportunity sample”.

My sample is comprised of three online groups, the Dissertation e-group, the Problem e-group and the MAinICT e-group. Initially it was decided that members in the Problem and in the MAinICT e-group, would only be colleagues from the MA in ICT whereas in the Dissertation e-group both colleagues from the MA in ICT and the MA in Media Studies would be subscribed as participants. However, the final synthesis of the groups varied to the way it was initially considered. Out of the thirty-five members of the three groups in total, there were ten full time ICT colleagues, twelve part time ICT colleagues, two full time colleagues from the MA in Media Studies, three PhD students, one colleague from the MA in Communicative Design in Education (CDE), four lecturers and three members whose identity still remains unknown (Appendix 1)[1].

[1] Except from the tutor’s names ad mine, all other names of colleagues, embers in the groups, have been altered.

Out of the thirty-two members whose identity is known, twenty-two speak English as their first language, among which one is American and another is Irish, and ten members are non-native speakers (other first languages: Greek, Japanese, Cantonese, Korean, African). Apart from the four tutors, twenty-two members are qualified teachers, and five members have a different professional background (programmers, designers, consultants). Finally, two members have an estimated age of 20-25, eleven of 25-30, seven of 30-35, six of 35-40, and one of 60-70 years old, excluding the tutors.

2. DATA COLLECTION TECHNIQUES

Data collection was based on three different techniques: anthropological participant observation, fieldnotes and semi-structured interviews.

2.1 Participant observation

As a member of the e-groups, my participation was similar to that of other colleagues. Throughout the year I took different positions in the groups similarly to other members and at various points I also took some initiatives. Initially, I provided information to four colleagues from the MA in Media Studies on how to subscribe to the groups. However, none of these members managed to subscribe to the groups mainly because of an alteration in the URL of the online environment that was being used. This incident caused a lot of inconvenience. Later, when a forth group, was initiated, I posted a message to it asking from its members to invite other colleagues to the new e-group as well. However, this did not happen and the new group very soon seized to exist. Finally, when a member complained informally to me about the lack of academic discussion in the groups, I pointed out to a message, inviting colleagues to start discussing about their dissertations, already posted in the e-groups. I encouraged my colleague to take action and respond directly to that message. However, he did not respond to the message nor to my invitation.

2.2 Fieldnotes

Whenever a face-to-face discussion about e-groups took place I kept fieldnotes. I also conducted informal interviews with four full time and one part time colleague from the MA in ICT as well as with another two colleagues from the MA in Media Studies. I will provide data from fieldnotes when I discuss how interaction in the groups was moving

forwards and backwards between two environments, the face-to-face and the online one. Furthermore, fieldnotes will be shown very helpful when in a later stage I will discuss my position in the study as a “therapy person”. This concerns the colleagues developed an active interest towards my study and started discussing with me informally their opinion about e-groups.

2.3 Interviews

Besides interviewing colleagues informally throughout the year, I also conducted six semi-structured interviews. The sample interviewed comprised tree male and three female, full time, ICT colleagues. The selection of the sample was based firstly on colleagues’ level of participation: high, medium, low. I selected one pair of colleagues who were very active participants of the groups, one pair with average level of participation and finally, one pair of colleagues with very low level of participation.

Secondly, I was interested in maintaining a balance in terms of gender among interviewees. Finally, full time, ICT students were selected as more accessible than part time colleagues or members of the groups from other courses. Interviewing more colleagues would have been very interesting. However, limitations in terms of time and space made this almost impossible.

Interviews were based on seven core questions (Appendix 2). However, as implied from the term “semi-structured” interviews, their structure was more open. In one out of six interviews I posted the core questions to a colleague over the Internet because of access problems and I received answers to these seven questions only.

3. APPROACHES TO DATA ANALYSIS

Messages in the e-groups were collected and were analysed both qualitatively and quantitatively. The messages analysed were collected during a five-month period of time (from the 24th of October until the 20th of March, 2001). In the MAinICT e-group 348 messages were analysed. However, some of these messages comprised more than one utterance. It was decided to add the utterances together and treat them as separate messages. Therefore, in the MainICT e-group 403 utterances were analysed in total. In the Dissertation e-group 18 utterances were analysed and 26 utterances were analysed in the Problem e-group.

3.1 The qualitative analysis

To analyse the messages qualitatively a computer program for qualitative analysis, Nudist VIVO, was used. The program has been very useful in facilitating the organisation and the reorganisation of the different categories in which messages were analysed. However there were limitations, which were making the use of the program by an inexperienced user, problematic. For example, its weakness to print out analysed messages with their coding restricted me from discussing my analysis with colleagues in detail, without accessing the program. Furthermore its weakness in distinguishing a true message from a mistakenly coloured spot in the screen made it very difficult for me to calculate the number of messages coded in each category. But for this weakness, the process of the quantitative analysis would have been less complicated.

The analysis was developed in three different stages. In the first stage, the main categories of analysis as well as some of the subcategories were decided (Appendix 3). Later, during the coding process it was decided that

some subcategories needed to be renamed and some others needed to be added. In the third and final stage, after having coded all the messages, there was a need for the whole analysis to be restructured (Appendix 4).

There were six main categories in which messages were analysed: the addressee, the mode of addressee, the position in thread, the tone of voice, the environment, and the content.

The addressee of the messages aims at indicating whether the individual utterance is addressed to an individual, to the whole group or to a part of the group. The addressee was either explicit from the beginning of the message (e.g. most of the messages were either starting with phrases like “Dear all” or “Hi Maria” or were finishing with phrases such as “have a nice weekend pulls/guys” or “buy/cheers everybody”. In other cases the sender of the message was making the addressee clear right from the subject title of the message e.g. “subject: For Daniel”), or implicit. Implicit messages were sent without any addressee usually as a quick reply to a message (e.g. “thanks very much”). Sometimes colleagues were relying on threading to make the message explicit (e.g. “Em…is that agreeing with me??☺”). Individual messages were also coded either as private or as public messages. Private messages were addressed exclusively to an individual (e.g. No problems - I'll do it) whereas public message although referring to an individual were meant to be read by other colleagues as well (e.g. http://www.ioe.ac.uk/scitech/Courses/ICTMA/index.htm, will send other paper over the weekend).

The mode of addressee describes the way a message was addressed and comprises two subcategories, the informal (e.g. I am sorry for the mistake, you can go to http://intelligenesis.homestead.com/me.html and from that place to the 500 words... I am really sorry about that ☹! C U! Sigh, Helen)

and the formal one (Appendix 5). Forwarded messages that did not contain any personal comment from the sender were not coded in this category.

The position in thread is an indicator of whether a message was inaugural or a reply as well as the generation of the reply. There were however messages posted without “purposeful threading”[2], as it will be discussed later in the paper. Messages have been coded in the following exclusive categories: 1) both technically and in terms of content inaugural/replies, or either 2.1) content-only inaugural/replies or 2.2) technically-only inaugural/replies. The last two categories occurred initially from member’s lack of experience in the use of threading and later as an effort from more experienced members to manipulate threading, to overcome the technical problems of the software.

The tone of voice is related to the way colleagues were perceiving their position towards other colleagues when they were posting a message. There are three subcategories in this category: peer (e.g. Thanks to everyone who kindly sent me an e-card and here's wishing everyone in the group who celebrates it, a very happy Xmas and all the best for your life - and particularly your educational studies in 2001!), superordinate (Appendix 6), and subordinate tone of voice (e.g. You're so brilliant, Felicity. I'm really "jealous" of your talent! ☺).

The environment is an indicator of the “openness” or the “closure” of the messages in terms of content and will be described in detail in a further stage of this paper when I discuss the “openness/closure” of the environment. The content of the messages is aiming at pointing out the subject of discussion within each message. I will refer to the content of the

[2] Purposeful threading will be defined later in the paper.

messages in more detail when I discuss the different uses of the online environment.

3.2 The quantitative analysis

After analysing qualitatively the messages, I formed tables indicating the number of messages coded in each category and each subcategory (Appendixes 7). Quantitative analysis facilitated correlations to be made between different categories of the qualitative analysis.

DATA ANALYSIS

1. WHAT IS THE ENVIRONMENT USED FOR?

Messages from e-groups have been coded in terms of content in four different categories: providing, requesting, socialising, and management. The first two categories contain several, identical subcategories[3]. The coding of the messages into these categories suggests that e-groups were used in several different ways.

1.1 The content of the discussion

More than half of the messages (235/403) were coded in the “providing” category whereas only 80 messages out of the 403 were coded in the “requesting” category. More specifically, out of the 235 messages that were providing "information”, “opinion” and “assistance” academic, professional, technical, personal, cultural, political or related to the process, 121 (30% of all the messages) were providing "information”. On the other hand, only 22 messages were requesting “information” of any kind. It can be therefore argued that the environment was mainly used as an online space for “information publishing” (Table 1, 2).

As presented in table 2, only few messages were requesting information, many of which were not replied to (e.g. out of 7 messages requesting academic information, Table 2, only 3 were providing information as a reply, Table 1). Half of the messages providing personal information were mostly containing “excuses” and were posted as “replies” to other messages.

[3] These are methodological issues and will be discussed in “methodology”.

Providing Information n= 403	Inaugural	Replies	Total
Academic	18	3	21
Technical	16	4	20
Professional	26	0	26
Personal	6	15	21
Cultural	2	0	2
Political	1	0	1
Process-Technical	8	7	15
Process- Professional	1	0	1
Process- Managerial	9	5	14
Total	87	34	121

Table 1

Messages Providing Information (MAinICT e-group)

Requesting Information n= 403	Inaugural	Replies	Total
Academic	6	1	7
Technical	2	1	3
Professional	0	0	0
Personal	1	0	1
Cultural	0	0	0
Political	0	0	0
Process-Technical	5	1	6
Process- Professional	0	0	0
Process- Managerial	0	5	5
Total	14	8	22

Table 2

Messages Requesting Information (MAinICT e-group)

However, it should be mentioned that some messages coded as inaugural in the CMC environment, were replying to a face-to-face request/inquiry; e.g.

> "Some of you requested I follow up on the Open Source I mentioned at the end of the Issues in ICT lecture last Monday".

Additionally, some of the messages coded as inaugural in the e-groups were transferring discussion from the face-to-face environment into the online environment; e.g.

> "Dear all
> In the Issues tutorial, I mentioned the Integrated Virtual Learning Environment…"

Finally, in some cases discussion was being transferred in the opposite direction, from the online environment to the face-to-face environment; e.g. discussion about the popularity of Big Brother (f.n.). Although the way messages were coded is a methodological issue, it is worth mentioning at this point to indicate that some of the messages coded as inaugural, were truly inaugural only in the online environment and not in the face-to-face one and that messages that appear to have remained not replied to, might have been replied to in the face-to-face environment.

Providing Opinion n= 403	Inaugural	Replies	Total
Academic	1	6	7
Technical	1	1	2
Professional	7	10	17
Personal	0	6	6
Process-Technical	0	0	0
Process- Professional	0	0	0
Process- Managerial	0	10	10
Total	9	33	42

Table 3

Messages Providing Opinion (MAinICT e-group)

Providing Assistance n= 403	Inaugural	Replies	Total
Academic	0	5	5
Technical	0	9	9
Professional	0	0	0
Personal	0	0	0
Process-Technical	0	1	1
Process- Professional	0	0	0
Process- Managerial	0	0	0
Total	0	15	15

Table 4

Messages Providing Assistance (MAinICT e-group)

Although it was argued that a large amount of information provided in the e-groups was not requested, this is not the case for the messages providing “opinion” or “assistance” (Tables 3, 4) as well as for messages providing “evaluation”.

Requesting Opinion n= 403	Inaugural	Replies	Total
Academic	0	0	0
Technical	2	2	4
Professional	8	1	9
Personal	5	1	6
Process-Technical	0	0	0
Process- Professional	0	0	0
Process- Managerial	1	3	4
Total	16	7	23

Table 5

Messages Requesting Opinion (MAinICT e-group)

Requesting Assistance n= 403	Inaugural	Replies	Total
Academic	5	0	5
Technical	2	2	4
Professional	2	1	3
Personal	0	0	0
Process-Technical	0	2	2
Process- Professional	0	0	0
Process- Managerial	0	0	0
Total	9	5	14

Table 6

Messages Requesting Assistance (MAinICT e-group)

A request seems to be necessary for evaluation to be provided (out of the six messages providing evaluation, all of them were replying to a message requesting for it), similarly to providing assistance or personal opinion (Tables 5, 6). For example, five messages were requesting for academic assistance, as can be seen in Table 6, and five messages provided academic assistance, as shown in Table 4. All messages providing academic assistance were replying to a request.

The difficulty of establishing pedagogical relationships between peers suggests that, to receive an evaluation/assistance/feedback, a request seems to be essential. Some of the members of the e-groups who were native speakers, were also participating in a colleagues' project and were supposed to give advise and comment on the use of English language by non-native speakers (Cheung, 2001). However, this hardly happened throughout the project. According to the native speakers, the fact that they were not specifically asked and reminded from their colleagues in the project to act as advisors prevented them from doing so, in fear of being impolite or insulting (f.n.).

Although replies in the e-groups are generally indicating that when messages were specifically asking for feedback, they would probably receive one, there were messages that remained not replied to. Revising the messages that were requesting evaluation but did not get any, it was shown that all three of them contained attachments; e.g.

> I am sending you the site with 570 (word-processor counting)
> ……
> I would be very much obliged to you if you could send me your comments, especially the negative ones! Thank you very much in advance,

A search to the messages that contained attachments indicated that almost none of them was replied to. Attachments were not in a displayable format in the e-mail. To read them, there was a need for members to log on to the e-groups. Most of the members were reading messages in an everyday-digest format, which was sent to them as e-mail by the program. Therefore, messages that contained attachments or that were in a non-displayable format for any other reason were hardly read from participants. I had three complaints from colleagues about messages sent in a non-displayable format (f.n.). Two of them told me that they were not reading these messages at all. Furthermore, when I was asking colleagues their permission to use their comments in the e-groups for my dissertation, I had to send the message twice, since the first time I sent my request as an attachment and I hardly received any answers. Later I found out that not many people had read the attachment (f.n.). Anthony commented:

> I didn't get any real messages…cause they were always in an undisplayable format…so whenever there was a message from Maria say…in undisplayable format and I just didn't bother checking on the website. I could have accessed it…I could have gone to the website and check them…but I just found…I would just found it…personally just not a really relevant form…so I just didn't bother. (Interview with Anthony)

It has been argued that the environment was mainly used for "information-publishing". However, this has not been its only use. Colleagues discussed several technical issues in the groups, firstly related to the use

of the medium and then related to several other similar areas (66 messages out of 403 were discussing technical issues).

A number of messages (33 out of 403) were either requesting or providing clarification about coursework, timetable, course-related URLs, etc.

> It was like quick, quick, quick answering and before about seminar, Paul asked some…about paper and I couldn't remember and I asked just anybody from you "please tell me" and then there was so many answers altogether from Jane…I don't remember…somebody even gave me websites, even though somebody who I didn't even know the name was still…gave me a site and I said "oh, quick for information" (interview with Jisu).

> As far as I remember some it was much easier to find out what happened to a lesson you missed or exchange opinions about lectures or even suggest some beyond the lesson (interview with Helen).

According to Jisu, one of the benefits of the environment was the possibility to "share some kind of simple information" (interview with Jisu), but important nevertheless. Although this was not the main use of the e-groups, almost every active member took advantage of the environment to exchange course-related information. Most of the colleagues that requested course-related information received an answer. As a consequence, there were quite a few messages (25/403) acknowledging colleagues for their response.

A common use of the environment was to socialise. 47 messages out of 403 (12%) were either discussing opportunities to organise face-to-face meetings, or were posting wishing-cards. Messages with this kind of content were friendly and informal and were addressed to all colleagues.

> …not so really helpful for academic things but fruitful for friendship…(interview with Jisu).

> One of the outcomes was the fact that we arranged meetings and got to know each other and at the end we became friends. This proximity I would say it might be closer than other years' one (interview with Helen).

> I felt actually socialisation was useful…looking for…trying to arrange meetings, trying to get together…(interview with Anthony).

Many members of the groups, who seemed to recognise and appreciate the socialising role of the environment, were referring to it as another benefit of the use of e-groups, and in one case (interview with Helen) the environment was considered “co-responsible” for the development of very good relationships among peers throughout the year.

Although the other two small e-groups, the Dissertation e-group and the Problem e-group were not used extensively from colleagues and not all colleagues were aware of their existence, some members have argued that although interaction in these groups has been limited, it was beneficial.

> I think…during the first term we discussed research essay…I think at that time we were quite active in using this communication, I think it’s good in terms of…we tried to upload a file and then we shared…I think it’s good…(interview with Ann Lee).
>
> Some of the students found subjects for their dissertation through the group (interview with Helen).

The Dissertation e-group was only active during the first term and there was some exchange of academic information. Although the data analysis does not indicate that the e-groups as a medium for discussion have facilitated colleagues to find the subject for their dissertation, (except probably myself) interviews indicate that some members felt they have benefited from the discussion in the small groups as well.

The Problem e-group was active throughout the whole year, only before meetings of the representatives with the course leader though. Helen, one of the representatives of the MA in ICT, felt that the Problem e-group was a very useful one.

> One of the purposes of its existence was the reference of our problems to our representatives and complaints about them officially through them, trying to change some things and we actually succeeded in some points negotiation with the tutors…(interview with Helen).

1.2 The depth of reflection and the development of discussion

Besides the content of the discussion it is considered purposeful to discuss the depth of reflection and the development of discussion that took place in the e-groups as well.

The development of discussion is related to the level at which every message takes advantage of the previous one to develop the discussion. I define the depth of reflection as the level of the elaboration of the content within an individual message and I distinguish it from the development of discussion. An attempt will be made to discuss the length of threading as an indicator for the development of discussion, and the use of purposeful threading, of clear structure and of correct grammar within a message as an indicator influencing responsiveness.

Purposeful threading is defined as the threading which comprises messages that discuss the same topic and are replying to previous messages within the thread. Threading in the e-groups has been very complicated partly because of technical limitations of the software and partly because of the different level of experience in the use of CMC among members of the e-groups. As a consequence, the use of threading has not always been purposeful. Messages that were sent as inaugural although their content suggested a reply and messages that were sent as a reply although their content suggested an inaugural message did not stand a fair chance of receiving an answer. However, in the MAinICT e-group only 41 out of 403 messages (10%) belong to this last category whereas 362 out of 403 messages (90%) were posted in a purposeful way.

As indicated in Table 7, there were not many long discussions in the e-groups. Longer threads occurred later in terms of time. Threads with six, seven and twelve generations of reply took place after January.

Generation of Replies	Number of Threads
1 generation	77 threads
2 generations	28 threads
3 generations	4 threads
4 generations	1 thread
6 generations	1 thread
7 generations	1 thread
12 generations	1 thread
Total	113 threads

Table 7
The Amount and Length of Threads (MAinICT e-group)

However, even in long threads it is not self evident that there was a development of discussion. To suggest this, one should reflect on the content of the messages carefully; e.g.

Inaugural message
Dear all
I was reading an article about using 'computer tracking tools' or 'multimedia tracking programs' to collect data about what learners are thinking when doing an online reading comprehension task. But what is a computer tracking tool? How can it record one's thinking processes? Can someone help me please?
Felicity

1st generation of reply
Dear Felicity
I am taking wild guess... now stick with me... here goes...This is done by tracking the electrons (brainwaves) transmitted from the brain, which is then recorded in the form of frequencies, (different frequencies measuring different thoughts) thus the measuring of the thought process. Phew...
Love, Wendy.

2nd generation of reply
Hi Wendy
Thanks for your prompt reply. What you said was more exciting than what I found at last: In language learning (not psycholinguistics) research, 'computer tracking' = using a computer program to check how many times a student uses an online dictionary, or how often a student uses simple words to replace the more difficult ones, etc
Felicity

3rd generation of reply
Different approach but really wild one, I think it is already there Wendy, PET Scanning if I am right.... unless they measure the brain activity based on different 'waves' the brain is transmitting to the computer 'sensors'. The Time and the New Scientist magazines were referring to PET scanning a couple of years ago... I can find the copies if you find the topic interesting...

Helen

4th generation of reply

I was taking a wild guess in order to put a smile on the face. I would be interest in reading this article please forward the address…

Wendy

This is an interesting example of a four-generation-discussion between three colleagues that was initially meant to be humorous but developed into a serious conversation. Wendy answers Felicity's inquiry in a humorous way, as stated in Wendy's last message. Felicity acknowledges her colleague for the reply and offers her point of view, based on the theoretical field of language learning. Helen reads both answers and suggests a third, which as stated by Helen is closer to Wendy's opinion. Helen even offers to provide her resource. The reflection on the content of this thread suggests that there was a development of discussion (Appendix 8).

This is however one of the few examples in the e-groups where there seems to be a development of discussion. The longest thread that took place in the e-groups was not really a discussion but mainly an invitation from some colleagues towards inactive members to contribute to the "resurrection" of the group after a long period of "dead silence". The seven-generation thread was mainly an exchange of information relevant to a procedural issue over which overseas students that were not in UK during Easter vacation were informed from other colleagues, who had remained in U.K. The six-generation thread had a socialising character. No development of discussion took place in that thread either. The content analysis of messages suggests that long threads were not always related to a developed discussion.

However, within the MainICT e-group, for a developed discussion to occur there is a need for at least three generations of replies. This is because the default exchange of messages among two-generation-threads is: inquiry/request (inaugural message), response/feedback/assistance (1st

generation of reply), acknowledgement/excuse (2nd generation of reply). This suggests that long threads although necessary, were not sufficient in the e-groups for a developed discussion to take place.

The depth of reflection is however not related to the development of discussions and can be revealed through the analysis of individual messages; e.g.

> All,
> There are a few among us who don't have serious access to computers, i.e. they are limited to the library machines. This has the disadvantage of not being able to install software, of not being able to use voice (in a quiet library) and having restricted hours of access, especially on the weekends. The issue is especially relevant to ICT in education students who really need to use this time to become familiar with the latest technologies. Recent experiments in online conferencing have highlighted this problem.
> We all know (and I think sympathise) with the position of the Institute and the department(s) that they would like to, but cannot afford to give us our own PCs. However, I think that the Institute should be able to come up with some other imaginative solutions to a very real problem.
> For instance, can the Institute not bulk-buy computers from vendors and then sell (and pass on the savings) to us? If not, can't the Institute negotiate a rental/leasing arrangement with vendors, so that we can lease/rent on discounted terms? These are just a couple of ideas, but I'm sure there are better ones. The point is, I think the Institute should use its purchasing power and organisational memory to at least assist its students in gaining serious access to computing facilities.
> Does anyone agree/disagree/care? I have created a poll for this purpose, so please vote (take note Florida!) Regards,
> Daniel.

This is an interesting example of a message with elaborated content. It is a well-structured passage, which makes a good use of language. The subject/problem discussed in the message is clearly introduced in its initial phrase. Several arguments that discuss the consequences of the problematic situation upon colleagues are provided and underline the seriousness of the problem. The message then offers some solutions and finally it invites other colleagues to share their opinion and offer feedback. Since this is a message with a start, middle and end, it provides arguments and proposes solutions using an elaborated language, it can be suggested that it has a high depth of reflection.

Contrary to the limited number of developed discussions in the e-groups there are several messages which are elaborated and have a high depth of reflection. The “good” structure of the message and the “correct” use of the language are very important factors, which facilitate comprehension and invite responsiveness.

On the other hand, posted messages with bad structure were neglected more often than others and messages with problematic grammar were incomprehensive and therefore often neglected. Informal conversation with two members of the group revealed that they were skipping messages that either did not have a good structure or were not making a satisfactory use of language; e.g. “ she does not write clearly! That’s why they all skip her messages” (f.n.).

Messages with bad structure were usually “announcements” that colleagues were copying from web sites and were carelessly posting (copy-paste) in the e-groups. As a consequence, some lines in the message had double spacing in between them whereas others had single spacing, and some phrases were cut in small parts, which were then scattered in several short lines, forming oblong, illegible messages. Messages with incomprehensive use of language were written carelessly, in a hurry, usually by non-native speakers; e.g.

> If we had to run a virtual university, and we had to consider some thousands of people's possibilities to log on to our system and work within, if not the first class and Lotus notes what else, considering their situation, access, computers, compatibility, experience with such systems, tailorability...etc (((from their homes, today))) Linus got both Nobels, I know...

In this message, the second part of the first conditional phrase is missing, whereas in the second conditional phrase not only is the second part missing but also there is no verb in the first part. It is therefore very difficult for the reader to comprehend and respond to such messages. This message received a response however, which almost ended up as a “flame” (Appendix 9). Could the incomprehensible message have been misunderstood by Chris, who insulted Helen about her educational

background? This is not clearly suggested in the exchange of the messages available.

Sometimes, even when the use of language is satisfactory it is still difficult for people with different experiences, and from diverse cultures and nationalities to comprehend other people's messages. Daniel mentioned the difference in the use of language among native and non-native speakers and how this was sometimes making it difficult to comprehend a message and respond to it;

> I feel a little bit guilty because some of our terms were very English…and you needed a very good understanding of English humour and English sarcasm to understand that and at the same time the foreign students made use of their own terms…I think I remember…who was it…Jisu would constantly use these symbols and nobody had no idea what they meant till I asked her and she said they mean "smiling" or "happy" and I had no idea…so that was interesting…(Interview with Daniel)

Indeed, the analysis of the messages suggested that messages from native speakers that were referring to TV shows, to English journals and generally to experiences related to English life were hardly commented by non native speakers, probably because they were hardly comprehended and vise versa; e.g.

> …No, I didn't read about it in The Sun or The Mirror - I stumbled across it in the Fortean Times, which I've read on and off since I was knee high to a 'Little Green Man' ;)…Daniel.

Reference to the Sun and the Mirror, the Fortean Times and the Little Green Man is totally related to the English everyday life and easily incomprehensible to newly arrived overseas students, especially since this message was posted in November. In the e-groups, there were several messages that belong to this category.

2. HOW CLOSED IS THE ENVIRONMENT AND HOW DOES ITS USE DIFFER FROM THE FACE-TO-FACE ENVIRONMENT?

In this part of the paper I will firstly discuss the “openness/closure” of the environment and then I will compare the use of the two different environments available, the face-to-face and the electronic environment.

2.1 The “openness” of the environment

Messages from the groups were coded in two more categories: closed, opened. Closed messages were considered to be those referring either to the environment we were using (the yahoo groups), or to the course (clarifications, discussion about coursework etc). There were messages referring to the use of the groups in relation to the course, and were coded as “closed to both the medium and the course”.

Messages that were discussing other forms of electronic communication were coded as “open in relation to the medium”. Those that were offering URLs or any other information related to our studies and our interests without being closely related to our course were coded as “open in relation to the course”. There were several messages that were coded as “open to both the medium and the course” and these were mainly the messages that were either not related to our studies at all, or were related to both the medium and the course more generally.

Data analysis, as shown in table 8.1, indicates that almost two thirds (2/3) of the messages in the e-groups were “open”, suggesting the “openness” of the environment. By introducing this term I want to suggest that colleagues were not restricted to specific topics of discussion related exclusively to the course content or to the medium, but every colleague

was welcome to offer his/her own contribution in the area of his/her interest.

Opened Environment n=403	Total
Opened in relation to the medium	56 (3.9%)
Opened in relation to the course	59 (14.6%)
Opened in relation to both	142 (35.2%)
Total	257 (63.8%)

Table 8.1
The "Openness" of the environment (MAinICT e-group)

Closed environment n= 403	Total
Closed in relation to the medium	50 (12.4%)
Closed in relation to the course	64 (15.95%)
Closed in relation to both	32 (7.9%)
Total	146 (36.2%)

Table 8.2
The "Closure" of the environment (MAinICT e-group)

The "openness/closure" of the environment may be related to the stated rationale of the MAinICT e-group;

> This e-group is for the MA students in Information & Communications Technology in Education at the University of London. The main purpose of its eXistenZ is the interaction and collaboration between the members of the group (and not only). (http://groups.yahoo.com/group/MAinICT)

The "openness" of the environment is introduced through the statement that colleagues may use the program in any way they like. Additionally, the reference to the film title "eXistenZ"[4] within the rationale is implicitly referring to the "openness" of the environment as well.

[4] This is a film that many of the ICT and Media colleagues had seen during a seminar at the Institute of Education

The environment in the other two small groups was more closed than open in consistency with their rationales as well: The rationale of the Dissertation group was to discuss dissertations, and the rationale of the Problem e-group was to discuss problems in the course. There are though limitations that prevent me from comparing the environment in the two small groups with that in the MAinICT group. Firstly, the exchange of messages in the two small groups was limited. Then, the rationale of the two small groups was not clear to all members[5] and finally some colleagues were not even aware of the existence of the two small groups[6].

2.2 Comparison between the use of the face-to-face and the use of the online environment

The online environment was not the only available channel of communication for most of the colleagues, especially the full time students. Face-to-face contact was another "arena", another setting for communication. Was there a difference in the way the two different environments were used?

Informal discussion with colleagues suggests that the more people were meeting face-to-face, the less they felt the need to generate long discussion in the online environment; e.g. "for me the cafeteria is an e-group. I hope I'll meet you here and we can discuss whatever we want"(f.n.). An interviewee argued:

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[5] I never understood why we had three groups because I didn't actually know what the Pre-group (Problem e-group) stood for…I thought it stood for Part Time…(interview with Todd).

[6] Interviewer: We had three groups; the dissertation one, the PRgroup and the ICTgroup…The PRgroup had only students from the MAinICT, no tutors, no students from the Media and Cultural studies. Did you know that?
Anthony: No! (Interview with Anthony)

> If people are going to run into each other every day then I think it's…speaking face-to-face in academic issues is probably superior in most respects…maybe for example you can just get issues out of the way quickly…build on each other's thoughts quickly in a face-to-face discussion although that can't then be shared really with other people, I think there's a large element of…it doesn't really need to be shared…ah…if people really do want to share things…we got a session every week, a seminar in the week where we can raise issues so in that sense there is no real need…there is no need to use the mailing list as a discussion forum for academic issues…(interview with Daniel)

Daniel's answer indicates some differences in the way we were using the face-to-face environment. In his opinion the possibility to offer instant feedback in the face-to-face environment is helpful for the development of discussion, probably implying that on the contrary, lack of instant feedback in the online environment discourages developed conversation from taking place. Evidence from messages and fieldnotes suggest that face-to-face environment was mainly used for academic discussion and that this was a preferable environment for all full time colleagues. Conversation though would move from one environment to the other. There are examples in the e-groups, as already mentioned, of more elaborated messages posted through the online environment, which were continuing a face-to-face discussion. The fact that some of these messages were elaborated suggests that colleagues were at times taking advantage of the asynchronous medium of discussion to reflect more carefully on their answers.

In one case the transfer of information from one medium of discussion to the other caused a debate, which was almost developed into a "flame" (f.n.). Jane and Tomoko had a face-to-face discussion, where Jane confessed her disappointment from a bad feedback that she had received from our tutor. She had expected to receive a good grade because of her hard work but instead she did not receive any grade at all, as was the case with most of the students in the module (f.n.). Tomoko, on the other hand, had received very good feedback and a good grade and was very satisfied (f.n.). When at some point Jane posted a message in the e-groups to invite other colleagues to collaborate on the course work, she mentioned her fear that not receiving a grade at all might have been a

polite way from our tutors to suggest that our work was inadequate. Tomoko, replied to Jane:

> …Contrary to you, I am happy with my feedback because it tells me what I need to do in the essay.
> As for the little disappointment of the grade, if I were you, I would interpret it as indicating that my summary might have deviated a little from the expected purpose in this task. The tutor's email of 23 November explains how feedback and the grade should be treated. It also says that most of the shortcomings related to a lack of clarity about the research question and /or a lack of adequate attention to the empirical operationalising of the research…

This is a small part of an elaborated message with depth of reflection. It almost led to a “flame” though because Jane felt that Tomoko’s reply was exposing her true bitterness about the feedback, by using information that was available to her from face-to-face discussion and not from the message posted to the online environment (f.n.). This suggests that not only discussion was going backwards and forwards between the two environments but also that careless transmission of information from one medium to the other was in one case almost “dangerous”.

However, even when messages had a low level of reflection, and were “simply” offering information related to a face-to-face discussion or were scheduling a face-to-face meeting to discuss coursework or any other problem, this still suggests that the CMC environment was used to facilitate face-to-face engagement and that it has been helpful as an additional channel of communication.

3. WHAT DIFFERENT POSITIONS ARE ESTABLISHED IN THE GROUPS?

The great variety of the groups' composition, the different expectations that members had from the medium as well as the different value that each member was attributing to the use of electronic communication, the diverse background experience of CMC and the different level of access that colleagues had in the two channels of communication, the face-to-face and the online environment, have influenced the position that each member established in the groups.

Not all participants within an online conference are active (Salmon, 2000, Preece, 2000). Only few colleagues from the MA in Media studies were subscribed to the groups. But even the few who were subscribed as members of the e-groups, did not participate actively. Informal discussion with some of them suggested that their reluctance towards the value of using CMC as a medium for discussion and the lack of experience of using CMC environments influenced their participation. When Anthony was asked the reason why he rarely participated in e-groups, during the interview, he argued: "I'm not particularly convinced it's a useful form for discussion…I think still face-to-face personal discussion is more useful".

Consequently, colleagues who shared a similar opinion, adopted the position of the "browser" (Salmon, 2000), a term introduced by Salmon, to replace the term "lurker" as less suitable for people who may not participate in an online discussion for different reasons other than just been "lazy" or unwilling to contribute, as suggested in the interview with Todd.

> I was…an observer really…I was happy to be an observer…I read the things that were going backwards and forwards, I took a really active interest into responses going backwards and forwards…but I never felt…initially I never felt confident enough to have my bit…(interview with Todd).

There was also a difference in terms of participation between full time and part time students. This was however consistent with my expectations since part time students spend much less time in course-related activities by comparison with full time students who are expected to spend a more significant amount of time in course related activities, in one academic year. Most of the full time students also have the opportunity to spend more time in the campus and have more face-to-face contact with their peers.

> I think…the face-to-face I think certainly contributed to who communicated with whom in the e-groups and people who (…) met regularly at the institute together were more comfortable communicating with each other than people who weren't in all the classes and…like the part time people, I think contributed less than the full time people and just because I think that you develop a report between a person after meeting them face-to-face…(interview with Anthony).

Anthony's answer suggests that the amount of face-to-face contact did not only influence the level of participation of part time students but also the responsiveness to messages in general. It could be argued that the groups became a "friendly club". When Todd was asked if he could think of anything less useful in the groups, he answered:

> Recently there's a couple of people on e-groups who I don't even know who they are, I've certainly haven't met their names before…I'm certain I'm not in any of their courses…so those e-mails aren't relevant to me (Interview with Todd).

It seems that in the e-groups there were "residents" and "visitors", "insiders" and "outsiders". Colleagues who were subscribed in the groups later throughout the year were confronted as "foreigners". Their messages would be replied to either by Helen or by me, who took up different positions in the groups as it will be discussed later, and would be ignored by several other members of the groups. Todd commented:

> I think that…that people were frightened of saying things cause they didn't really know everybody that well…(Interview with Anthony)

When "outsiders" were entering the environment, the "club" was automatically becoming a "public space", inhibiting in a way the friendly

participation. When Todd was asked why he felt more comfortable being an observer, agreeing with Anthony, he argued: “Because there was a lot of evidence of namedropping…and I hadn’t either heard of these names or read their work…”(Interview with Todd).

Lecturers, members of the e-groups, were also considered as “outsiders” mainly because they were not actively participating in the groups. Only in one case, was there an interaction between a tutor and a colleague in the groups and in another one all colleagues received a private e-mail from our course leader, which was suggesting that he was reading the messages from the e-groups (Appendix 10). In the groups we generally seemed to forget “outsiders” as long as they remained silent. However, some colleagues were intimidated when realising that tutors were reading our messages. When Anthony was asked why in his opinion, not everybody was participating in the same way, he answered:

> Anthony: Well, it could be because people are busy with other things but it could be that…people are afraid…to say…say something to this group…
> Interviewer: Why?
> Anthony: Because it’s…it’s so open…umm…
> Interviewer: Do you mean like open to the professors…to the tutors as well?
> Anthony: Yes and saying something…it’s almost a bit risky…you’re exposing yourself…you’re exposing something that…(Interview with Anthony)

Even though lecturers were not active, whenever some members of the group had the suspicion that tutors might be reading the messages, their participation was inhibited. This phenomenon initiated an online discussion between colleagues around the “Foucaudian panopticon” and “Big Brother”; e.g.

> To be honest...When I post a message, I'm fully aware that "the Big Brother is watching". Hi, Big Brother! Felicity here.

However, the one example available in the groups of an interaction between our supervisor and a colleague suggests the automatic establishment of a pedagogical relationship in a non-peer relationship. The supervisor’s message was formal and had a superordinate tone of voice,

and both messages from the supervisor and the colleague were highly elaborated. The supervisor suggested a few points that the colleague should take into consideration before proceeding with the dissertation. The colleague acknowledged, and expressed some other thoughts of hers concerning her dissertation (Appendix 11).

Pedagogical relationships were not however established between peers. It seems that peers were not feeling comfortable to offer their opinion, to give advice or feedback, to evaluate another colleague's work etc. without being requested to. Even when participants were requested to act as experts, they rarely had a "superordinate" tone of voice, and their mode of addressee was almost always informal, trying to be as polite as possible (tables 9, 10).

Tone of Voice n = 403	Total
Subordinate	2 (0.5%)
Peer	319 (79.1%)
Superordinate	51 (12.6%)
Not codable messages	31 (7.7%)
Total	403 (100%)

Table 9

Messages indicating the tone of voice (MAinICT e-group)

Mode of Addressee n= 403	Total
Informal	374 (92.8%)
Formal	28 (6.9%)
Not codable messages	1 (0.3%)
Total	403 (100%)

Table 10

Messages indicating the Mode of Addressee (MAinICT e-group)

Half of the messages that had a superordinate tone of voice were inaugural, meaning that in some cases nobody had asked for them; e.g.

> Have you ever thought that women are the best on the Internet since they have been weaving NETS for 4000 years! (he, he I know this is not a scientific argument - Gibson defines the internet as "tailored hallucinations" whereas the observer is observed and the user is used...) The word Technology is combined by the Greek words Techni + Logos whereas Techni means art...

Messages like this seem to have irritated some members of the group. Two members of the groups complained informally about a third one being antagonistic and showing off (f.n.). Anthony commented:

> Well, there was a few people posting…umm…posting messages that I felt they were just trying to demonstrate that they…that they were just kind of showing off…"look what I know"…and it wasn't really an attempt to discuss anything…it was more just an attempt to say "I know all this stuff" and then there wasn't any discussion about it. (Interview with Anthony)

There were however several inaugural superordinate messages that were providing managerial information or useful professional information, suggesting that it cannot be generalised that all inaugural superordinate messages were causing similar feelings amongst colleagues.

There were several other positions established in the groups. Two colleagues, who were also the most experienced in the use of CMC among the members of the groups, Daniel and Helen, contributed more than anybody else in the "providing" categories. It can be argued that they were considered to be the "experts" within the groups and often somebody would refer directly to them to ask for some information. Todd argued:

> I explicitly tried not to contribute too much, I didn't want to, perhaps I did but my contributions involved (…) consciously inviting other people to speak (…) and I generally wanted to actually spark debate so I would take one side or…ah…and it was good from my point of view…I was forced to articulate…I wrote something down, I got it out there in the public domain, people were then free to respond to that…(interview with Todd)

The experience that Todd had from the use of CMC environments and his expectations from the medium influenced the position that he established.

He was the “expert” whenever he was invited to offer his opinion in a domain of his expertise, he was one of the course representatives, so he had to take initiative and discuss possible problems in the groups and he was the “questioner” as well as the person who was trying to “spark debate”. His answer suggests that he felt that he benefited from the positions that he established within the group and especially when he was expected to provide a professional response to an inquiry.

Helen, on the other hand who, as already mentioned, was one of the course representatives as well, was the person to propose the establishment of some form of electronic communication in the MA and it was she who initiated the groups. Helen was taking initiative within the environment and was making decisions related to the management of the groups, by changing, for example, the way in which other people were receiving their messages without prior notice; e.g.

> I am sorry, Maria, I changed your subscription into a daily digest one, but now is back to normal (message from Helen)

or by adding members to the list without informing other members; e.g.

> Hi Nick! (…) Welcome aboard (message from Helen)

or by giving instructions to members on how to better use the environment; e.g.

> Suggestion: I think that it would be better if you could write the subject every time so to figure out quickly what the message is all about...

It could be argued that although informally, Helen was acting as a moderator in the groups. The position that Helen took up in the groups though was not consistent since she had not ensured that everybody was subscribed in the corresponding groups. There were several other people that were taking up the position of the moderator within the groups throughout the academic year, either by openly challenging debate or by sending messages related to the management of the groups. The

following message is an example of an invitation to members to join the discussion; e.g.

> Hi Chris the little corpse/Snowball. It is safe here. Cold, quiet, clean...(message from Felicity)

On the other hand, some members were informally attributing specific positions to other colleagues; e.g.

> Dear Maria, Oops! The Activity Theory group is inactive too. So, what are you planning to do? Are you going to declare death of these groups and perform a post-mortem examination? (Message from Felicity).

Out of the six colleagues that were asked whether in their opinion there were some people in the groups tending to run them (Appendix 12), only one answered negatively; e.g.

> No, see actually Helen she only took the role to make sure everyone were joining the group but after that I don't think there's anyone to facilitate the group, so actually we are quite self-initiated…if you don't want to post a message, ok! No one will force you. (Interview with Ann Lee)

However, Ann Lee's answer suggests that in her opinion the role of the moderator is mainly to "encourage" participation constantly. This is only one role of the moderator though (Fountana, 2001)[7] and as will be discussed later, Helen had informally invited at least one colleague to participate more actively (f.n.).

I was taking the position of the moderator from time to time as well, mainly by welcoming new members in the groups and by answering to colleagues' inquiries, related to the e-groups. This kind of discussion would though take place informally and outside the online environment. Sometimes, colleagues would treat me as a "therapist". They would initiate discussion about the e-groups, they would share their opinion with me and they would confess to me problems in their online relationship with another

[7] Fountana, M. (2001). The role of the moderator in a CMC environment. Essay submitted in the CMC module, MA in ICT, London: Institute of Education. Available from the author.

colleague; e.g. the debate between Tomoko and Jane, complaints from Daniel, Todd and Anthony about Helen (f.n.). In another occasion they would complain about abnormalities in the function of the e-groups; e.g. the change of the e-groups into yahoo groups, the messages received in a non-displayable format etc. (f.n.).

I even once received a private e-mail from Todd asking me to find out why Helen was sending so many messages to the groups and later I received another private e-mail from Todd informing me that he was really angry with Helen because she had sent him an e-mail, inviting him to participate more.

Colleagues from the MA in Media Studies and part time students were constantly feeling obliged to apologise to me and were giving me excuses either about not managing to subscribe to the e-groups despite my help or about not participating enough (f.n.). Finally, it is worth mentioning that even when interviewed, some members of the e-groups were more “careful” in what they were saying, than when discussing informally with me.

4. THE RELATIONS ESTABLISHED BETWEEN THE FINDINGS AND RELATED ISSUES RAISED IN THE LITERATURE.

In this part of the paper I will reflect on the data analysis and I will discuss whether the main findings are able to suggest an adequate explanation of the findings as a whole. Then the findings will be discussed in relation to the issues raised in the literature.

4.1 What kind of relationship is established between the findings?

The “openness” of the e-groups might have accounted for the lack of the “development of discussion”. In the data analysis it was argued that the online environment was very “open” in terms of content. This was made clear very early in the MAinICT e-group. Any use of the groups was possible and welcome. In the MAinICT e-group rationale there were no restrictions or limitations and it was only stated that e-groups would be used as a medium for collaboration and communication. Data analysis has suggested that the environment was mainly used for “information publishing”.

The face-to-face contact might have accounted for the lack of developed discussions in the online environment as well. As already discussed, the online environment has not been a unique channel for communication in the course. Face-to-face contact was common especially among full time students. Fieldnotes, interviews and personal observation have suggested that the face-to-face environment was preferable to students who had equal access to both environments, for the engagement in more in-depth discussions.

McConnell’s study (-) has suggested that there was a distinction between the face-to-face and the online environment, in terms of support that

members showed to their colleagues. This difference is however correlated to the way members perceived their responsibility towards their colleagues in each environment and is different from the environment in this study where there was total lack of “online contracts” and colleagues did not have, at least formally, any responsibility in relation to their participation in the groups.

Finally, in the discussion of the different positions undertaken within the online environment it was suggested that not all members in the groups felt equally comfortable in the online environment. The terms “visitors” and “residents” were introduced to provide an indication of the character of the online environment, which was described as a “friendly club”. The terms “insiders” and “outsiders” were also used in proportion to the way Wegerif (1998) used them in his study, as will be discussed later in this paper. This suggests that although the environment was ”open” in terms of content, it was “closed” in terms of membership, which might have accounted for the “inactivity” of many colleagues and mostly of part time students and of colleagues who were subscribed later in the year.

4.2 What is the relation between the findings and the literature?

In the literature review the terms collaboration, cooperation and communication were discussed and it was suggested that there are no globally recognised definitions and that the use of these terms is generally undistinguished in the literature (Kaye, 1991), although some authors (Tiessen and Ward, 1997, Galton and Williamson, 1992) have tried to draw a distinction. Kaye (1991) makes a distinction between cooperation and communication and argues that communication is the exchange of information and is a prerequisite both for cooperation and collaboration to happen.

The initiation of an online environment in the MA in ICT with the participation of colleagues from the MA in Media Studies was aiming at supporting cooperation and collaboration between colleagues, as stated in the rationale. The online environment was not however the only environment used to support collaborative learning in the MA. The contribution of the face-to-face contact that colleagues had throughout the year has already been discussed in another part of this paper.

Several educational benefits such as the engagement in problem-solving, in discovery-learning, in decision-making, in sharing different perspectives with peers, in reaching a deep level of understanding and in actively participating in learning (Damon, 1984, Johnson and Johnson, 1998, Meloth and Deering, 1992, Kaye, 1991) have been cited in the literature review to indicate the positive effects that collaboration has upon peers. These benefits should be sought in both environments used in this specific example.

What this study is mostly concerned with, is revealing the way and the level in which the environment was used as a setting to facilitate collaboration, if it was used in that way at all.

This specific online environment had an informal character and an open orientation. In the literature review the use of communication technologies has been discussed and Koppi's opinion has been cited, according to which communication technologies are beneficial mostly "as a communication medium for student collaboration, as an information resource, a search tool and as a medium for publication" (Koppi et al, 1997). This coincides with the way in which the online environment was used in this setting. Data analysis has suggested that e-groups were used as "an online space for information publishing", since the majority of messages was providing different kinds of "information".

This was not however the only use of the e-groups. As already discussed, the rationale of one of the groups was the discussion of problems in the

MA in ICT, and one more was initiated to encourage and facilitate academic interaction. In the sort period of time that they were active, it could be argued that educational processes such as problem-solving and decision-making as well as academic discussion, although limited, took place in the groups.

> At the beginning I think we were quite active and quite enthusiastic about the channel…(interview with Ann Lee).

Some kind of assistance and evaluation, although limited, also took place in the e-groups. The greatest advantage of the use of e-groups has been though the “social benefits”. As argued in an earlier part of the paper, it seems that the use of the online environment encouraged the development of friendly relationships among colleagues, and this finding agrees fully with the literature (Johnson and Johnson, 1998), where it is argued that online environments are very beneficial as a medium for socialisation.

It was argued in an earlier part of this paper that the main advantages of asynchronous communication over face-to-face discussion or synchronous communication are considered to be i) the opportunity for participants to engage in in-depth discussions (McConnell et al., -) ii) the possibility to develop more “in depth” arguments (McConnell et al., -) since asynchronous communication provides time for background reading before responding to a message (Steeples, 1996, Koppi et al., 1997, Marjanovic, 1999) and iii) the convenience in keeping up with the pace of discussion (McConnell and Hammond, -).

Data analysis suggested that colleagues preferred the face-to-face environment to engage in in-depth discussions and they even had a very positive attitude towards synchronous online communication since some of the colleagues had the chance to try both text-based synchronous interaction and video conferencing throughout the year.

> If there was anything unclear…if someone had used a reference let's say, or used a word that you didn't know or you didn't understand you could say "hang on a sec, tell me a bit more about that" or "what do you mean, what does that word mean, what did so and so say?" it would be more immediate…there is a delay going backwards and forwards with e-mail. People say "I'll reply to that later" and you never get around to it…it's immediate. (Interview with Todd)

Todd's main argument in favour of synchronous discussion seems though to be its possibility to provide instant feedback rather than the development of in depth discussions, in agreement with Daniel, whose relevant comment was cited earlier in this paper.

The electronic environment was used more extensively for the development of in-depth arguments than for the development of in-depth discussions, as suggested from data analysis. Messages posted in the groups suggested that discussion that was taking place in the face-to-face environment was moving to the online environment whenever there was a need for a more elaborated answer or for some kind of background research (e.g. the recovery of a URL, of an author's name etc.). This appears to be one of the main advantages of the use of e-groups and it coincides with one of the main benefits of the use of asynchronous online environments, as indicated from the literature (McConnell et al., -).

However, the possibility to follow the pace of a discussion, although one of the main advantages of asynchronous learning, was not perceived as a benefit in the e-groups because of the weak threading of the software. A close look at the discussions that took place in the groups suggests that the asynchronous mode of interaction did not facilitate colleagues to keep up with the pace of the discussion.

Contrary to Wegerif's findings, which suggested that the technical weaknesses of the software used to support threading did not influence the students' interaction (Wegerif, 1998), the technical problems of the software used in this example, were not overcome. Well supported threading (threading which clearly indicates the position of the message in the discussion both from the way the thread is represented as an image,

e.g. tree-structure, and from other indications, e.g. numbers in front of the messages) seems to facilitate members, who have forgotten the subject of discussion, to revise the messages, follow the discussion and even argue back. In the e-groups many messages were neglected and it was difficult for late responses to be connected to earlier discussions. As a consequence, many conversations were interrupted and many messages were not responded to. This seems to be common though in online conferences. McConnell (-) refers to messages that were neglected and to late responses that were making it harder to follow a discussion as well.

In the literature, the role of CMC for distant learners was emphasised (Moore, 1991 cited by Lauzon, 1992). Distant learners can overcome the problems of “locus” and “time” as well as the fact that they cannot meet their colleagues face-to-face by entering an “online community”. Indeed, it has been shown in the data analysis that members, who had face-to-face contact with other colleagues, preferred the face-to-face environment to engage in developed discussions. However, part time students who had difficulty getting to the campus as often as full time students and could therefore be characterised as distant learners do not seem to have taken more advantage of the medium. Neither have full time students who were living far away from the campus and so could not come in frequently. Complaints from colleagues from the MA in Media Studies who did not have Internet access and who were not coming to the campus frequently suggest that Wegerif’s (1998) findings of access problems influencing participation are pertinent.

As already discussed, part time students were expected to participate less than full time students because of the different structure of their studies. It was suggested that the groups had acquired a character of a “friendly club”. Within the online environment some colleagues, mostly full time ones, who had everyday contact with other members of the groups, were feeling very comfortable in the online environment and were thought of as being the “insiders” by part time students or new members, who on the other hand were feeling as the “outsiders”. Wegerif (1998) has used the

same terms to describe how students felt in the online environment, in his study. He has argued that individual success or failure in CMC depends on the extend to which members are feeling comfortable within the environment or not.

> Students who came online later than others faced an already established community which they found it more difficult to join and an ongoing learning experience which they found it difficult to catch up with. (Wegerif, 1998)

The findings in this study coincide with Wegerif's findings. To be able to make suggestions at the end of this study of how the online environment could have been better taken advantage of, the possible reasons that prevented mainly new members from "crossing the threshold from feeling like outsiders to feeling like insiders" (Wegerif, 1998) need to be discussed.

Since the e-groups were informal and there were no online contracts, there was no official moderator for the groups who might be responsible for introducing new members properly to other colleagues and who might help them to establish their position in the groups. The importance of the moderator in the online environment has been discussed in the literature and other studies have been cited which make explicit the importance of someone establishing the position of the moderator within the groups (Slavin, 1995, Berge and Collins, 1995, Baker and Dillon, 1999, Shaw, 1991).

The need for a moderator in the e-groups was apparent in this study as well. Although nobody had officially undertaken this position in the groups, data analysis suggested that different members of the groups and one member in particular, were informally acting as moderators in the online environment. This is not uncommon though in collaborative learning. McConnell (1994) has described a view of collaborative learning as a form of "open, negotiated learning. Within post-compulsory education it has a history in the humanistic approach to education and in the self-directed

approach to learning. This approach emphasizes internal moderation by learners themselves" (McConnell, 1994; p.23).

However, the fact that some members were undertaking the position of the moderator inconsistently, did not help the group in general, and new members and part time students in particular, to overcome specific problems that were met in the groups and indicates the need for online contracts, in consistency with the literature (Winograd, 2000, Berge and Collins, 1995). McConnell (-) has also discussed the benefits of using explicit online contracts in his study, since although there was an informal contract related to members' participation in the online environment and a colleague was elected as a moderator, the lack of an explicit online contract was accounted for causing feelings of frustration in the group.

In the e-groups, there was no formal or informal online contract and colleagues were taking up different positions in the groups informally. Besides, colleagues that were acting as moderators, there were members that were only "browsing" through the groups and others who were more active and were trying to "spark a debate" in the groups or were adopting the position of the "questioner" or that of the "information provider". These different positions appear to be common in the online environment. McConnell (-) has also identified the positions of the questioner, the observer, the "lurker", the information giver etc. in his study.

In the literature review, the subject of who benefits most within the online environment was discussed and it was argued from the literature that parameters such as the composition of the group, the personality and the behaviour of the members, the structure of the tasks and the groupsize (Webb, 1989, Galton and Williamson, 1992) influence the level of its achievements. It has been argued that when there is not a matching composition within a group, cooperation is not very effective and it can "stigmatise low achievers" (Blumenfeld et al, 1996). In this study, the approach to the analysis of the online interaction does not enable correlations to be made between these parameters and the way e-groups

were used. However, data provided by interviews and participant observation, although limited, are interesting and could be discussed at this point of the paper.

The e-groups were composed mostly of postgraduate and doctoral students from the department of science and technology, at the Institute of education. It can be argued that all colleagues were high-ability students with similar interests. However, the fact that colleagues had different educational and professional backgrounds (mostly teachers but there was also one programmer, one instructional designer, Media Studies colleagues who were neither teachers nor were they familiar with CMC environments, etc.) might have accounted for their hesitation to participate actively in the e-groups.

> I was interested in what was going backwards and forwards…the debate was going backwards and forwards but people would say "have you read so and so" and either I'd never heard of this person or I wasn't familiar with that work and initially it was almost quite intimidating…(Interview with Todd)

It seems that some members were intimidated by what other people knew, who were studying in the same department. However, their background was different.

Finally it was argued in the literature that those members who elaborate information when explaining it to other colleagues benefit more than others. When Daniel was asked whether he felt he benefited from the groups in any way, he replied:

> I was forced to articulate…I wrote something down, I got it out there in the public domain, people were then free to respond to that…that's up to them, but I got it out of my system…just almost like therapy…so, in that sense it's quite good…(interview with Daniel)

Daniel's answer suggests that at least one member of the groups felt that by being really very active and by having to provide elaborated answers to colleagues who were requesting it, he benefited a lot.

CONCLUSION

In this study a developing interest has been shown towards peer support within a self-initiated online environment in a postgraduate course at the Institute of Education. In the literature review, definitions were provided for terms such as self-help groups whereas several theories in favour of peer support for collaboration were provided.

The nature of learning, was discussed and it was argued that although scientists involved in the educational and psychological research have expressed different opinions over the years, during the last decades from the developmental perspective on learning it has been widely accepted that children influence each other and learn from peers and that interaction between peers increases their conceptual skills (Slavin, 1995).

Terms such as collaboration, cooperation and communication were also defined and McConnell's (1994) definition on cooperative learning as an open and negotiated form of learning where students take responsibility for their own learning, are motivated intrinsically and moderation takes place internally between them, was introduced. It was also suggested that cooperation may not always be successful and reasons that have restricted collaboration in other paradigms of peer support through the use of CMC in adult education were cited.

However, it has been argued that everybody agrees that collaboration has educational benefits for members of the groups. Among others, the social benefits of cooperation have been underlined. It has also been suggested that the social dimension is very important for successful online groupware as well.

Other elements of successful groupware were also cited in the literature in an effort to discuss who benefits more from collaboration. Many different opinions were provided as an answer to this question and it was also suggested that not only low achievers benefit from cooperation but also

high ability students. The positive and negative points of using Computer Mediated Communication systems, both synchronous and asynchronous, were introduced. The opinion of Koppi et al (1997) about the most beneficial use of communication technologies “as a communication medium for student collaboration, as an information resource, a search tool and as a medium for publication” was provided.

It was argued that although synchronous online environments are considered to be motivating and fun, they have the disadvantages of face-to-face interaction, where it is more difficult to develop a more in depth argument and it can be sometimes hard to follow the pace of the discussion. Asynchronous online environments, on the other hand, may be less stimulating but they have some advantages over face-to-face and synchronous online interaction: i) the opportunity for participants to engage in in-depth discussions (McConnell et al., -) ii) the possibility for more “in depth” arguments (McConnell et al., -) to be developed, since asynchronous communication provides time for background reading before responding to a message (Steeples, 1996, Koppi et al., 1997, Marjanovic, 1999) and iii) the convenience in keeping up with the pace of discussion (McConnell and Hammond, -).

The online environment examined in this study existed independently to my involvement and comprised three online groups that were initiated from peers, had an “open” form in terms of the content of discussion and were moderated internally in an informal way, similarly to McConnell’s (1994) definition. Members in the groups were mainly from the department of science and technology at the Institute of education. Messages from the groups were collected over a five-month period of time and were analysed both qualitatively and quantitatively. Both formal and informal interviews from colleagues as well as fieldnotes kept throughout this five-month period of time facilitated the analysis of data.

Data analysis suggested that the online environment was mainly used as an online space for publication, as an information resource and as a

supplementary medium of communication, in agreement to Koppi's et al (1997) opinion of the most beneficial use of the online environment.

It was also suggested that although colleagues felt that no extended academic discussion took place in the group, the environment was useful as a mode for socialisation, in consistency with the literature. It was however argued that although the online environment was "open" in terms of the content of the discussion, it was "closed" in terms of membership since it ended up being a "friendly club", causing feelings of alienation to new members and colleagues who did not have equal access to the face-to-face environment. This finding was consistent to Wegerif's (1998) suggestion of the social relationships influencing successful groupware.

It could however be argued that collaboration was not always successful in the environment examined in this study, in accordance to the literature. The lack of online contracts caused many problems, technical among others, since there was no official administrator or moderator in the groups. Colleagues were taking up different positions in the groups but this was inconsistent throughout the five-month period studied in this paper. Threading limitations of the program, as well as lack of expertise in the use of CMC were other parameters influencing participation in the groups.

Although the development of in-depth discussions was cited from the literature as one of the main benefits of using asynchronous online environments as a medium for discussion, data analysis suggested that colleagues preferred the face-to-face environment to engage in more in depth discussions. Because of the limitations of threading it seems that the online environment used in this study did not facilitate colleagues to follow the pace of the discussion either. However, data analysis indicates that the online environment was used as a medium for the development of more in depth arguments, as suggested in the literature.

Data analysis in combination to interviews have pointed out to several suggestions in relation to the design and the implementation of a self help

environment that can directly address next year's cohort of students at the Institute of Education. Following this chapter I will provide a summary of proposals. Prior to that though, I would like to point to relevant work in the field drawn by other colleagues in the MA in ICT as well to further research proposals.

Cheung's (2001) study is concerned with the use of CMC to support peer collaboration at a second language learning environment. Among others, the findings in her study suggest that although a pedagogic relationship was established between the moderator and the participants of the online environment this was not the case in the relationship between peers, similarly to my findings. These findings are also in agreement with those in Takase's (2001) study that is looking at the use of CMC to teach English to Japanese learners. Furthermore, her suggestion for the position of the moderator to be established in an appropriate way coincides with the suggestions in my study.

Maqsood (2001) in his study is concerned with the democratising potential of online environments by examining the influence of pedagogic settings on modern and postmodern ethical discourse types among postgraduate peers. Due to the pre-existing equality of the peer relationships of the participants there was great difficulty in establishing an explicit hierarchy of expert-apprentice positions in the online asynchronous interaction.

Finally, a proposal for further research would be to undertake a more fully ethnographic study which will be looking at postgraduate courses as a whole in terms of different mediums of collaboration (face-to-face, online environments etc.) and not in respect of one medium.

SUMMARY OF PROPOSALS

- An introductory meeting would be useful to discuss the rationale of the online group as well as members' expectations as an outcome of their participation to the online environment (interviews).
- An introductory meeting would also be useful to explain the facilities of the online environment to first time users (interviews).
- To overcome anxiety caused by fear of being "exposed" in the online environment, it would be preferable, if possible, for members to get to know each other before initiating a serious discussion (interviews, f.n.).
- To overcome technical problems, the position of the administrator who will be subscribing members to the groups and adding members to the list when necessary, may need to be negotiated (interviews, data analysis).
- To overcome problems caused by the totally unstructured character of the online environment in this study, online contracts may need to be made (interviews, data analysis).
- The role of the moderator seems to be very important within an online environment and therefore may need to be negotiated in the online discussion group as well (interviews, data analysis, f.n.).
- Members of the group could take it in turns to moderate (interviews, f.n.).
- To promote academic discussion members could take it in turn to arrange weekly debates (interviews, f.n.).
- Having a lecturer or a colleague posing the question as supplementary to the weekly seminar is another suggestion to relate the online discussion to the course (interviews).
- One group with a broader rationale seems to be more preferable than several groups with a more "closed" rationale (interviews, f.n.).

- Interviewees suggested that it would give to participants a greater sense of ownership, if the ioe could set up its own mailing list and even conduct seminars on how to use it (interviews).
- To overcome threading problems, an interviewee suggested that the University could get a Newsreader (a new server) so that students use UseNet and have a range of UseNet discussions, since UseNet threading seems to be superior than that of other online environments (interviews).
- For quick access, accuracy and convenience in receiving important information related to the course, interviewees suggested that both the registry office and the secretary's office could have access to the online group (interviews).

APPENDIX 1: List of members in the groups

MEMBERS	DEPARTMENT	FULL/PART TIME	AGE	PROFESSION	FIRST LANGUAGE
Jack	ICT	Part time	35-40	Teacher	English
Austin	ICT	Part time	35-40	Teacher	English
Jisu	ICT	Full time	25-30	Instructional Designer	Korean
Felicity	ICT	Full time	25-30	Teacher	Cantonese
Jane	ICT	Full time	30-35	Teacher	English
Anthony	ICT	Full time	25-30	Teacher	American
Daniel	ICT	Full time	25-30	Programmer	English
Todd	ICT	Full time	25-30	Teacher	English
Patrick	ICT	Part time	30-35	Teacher	English
Weenie	LL and Science Technology	Part time-PhD student	30-35	Teacher	African
Ann-Lee	ICT	Full time	25-30	Teacher	Cantonese
Takashi	ICT	Full time	25-30	ICT consultant	Japanese
Maria	ICT	Full time	20-25	Teacher	Greek
Chris	ICT	PhD student	30-35	Teacher	English
Judy	ICT	Part time	25-30	Teacher	English
Kelly	ICT	Part time	35-40	Teacher	English
Laura	CDE	Part time	35-40	Teacher	English
Susan	ICT	Part time	25-30		English
George	ICT	Part time	25-30	Teacher	English
Kostas	ICT	Part time	35-40	Teacher	Greek
Helen	ICT	Part time	30-35	Teacher	Greek
Ron	ICT	Part time	60-70	Teacher	English
Wendy					
Ben					
Anzie	ICT	Part time	25-30	Teacher	Irish
Tomoko	ICT	Full time	30-35	Teacher	Japanese
Steven	ICT	Part time	35-40	Teacher	English
Yasmin	Media	Full time	20-25	Student	English
Kate					
Beth	Media	Full time	30-35	Teacher	English
Christina	ICT	PhD student	30-35	Teacher	English
Paul Dowling		Tutor			English
Andrew Brown		Tutor			English
Harvey Mellar		Tutor			English
Ian Stevenson		Tutor			English

APPENDIX 2: Core questions of the semi-structured interviews

1. How did we start communicating through e-groups?

2. 2.1) Did everyone participate in the same way?

   2.2) How would you rate your level of participation?

3. Were some people tending to run the thing?

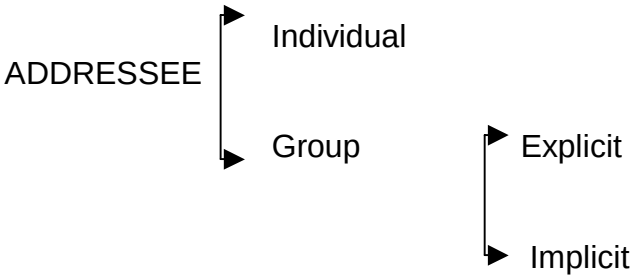
4. Were some aspects of the e-groups more successful?

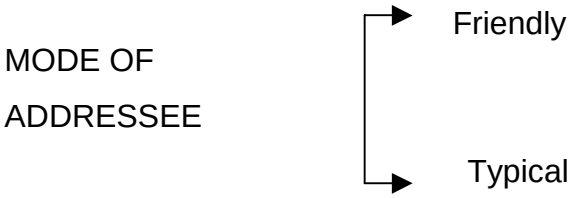
5. Do you think of anything useful or anything not useful in the e-groups?

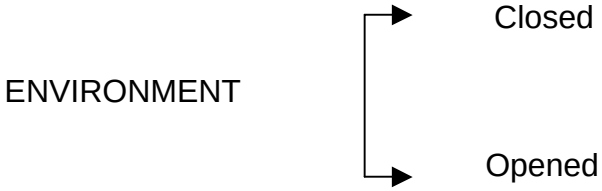
6. What kind of other electronic communication do you participate in?

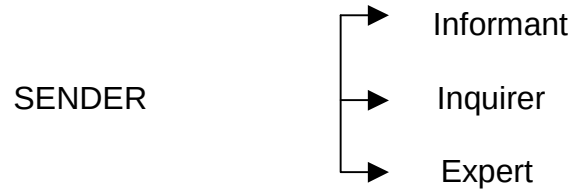
7. Could you give me some advice for next year's groups?

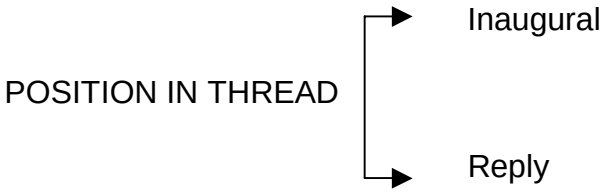
APPENDIX 3: Initial analysis scheme of the coding of the messages

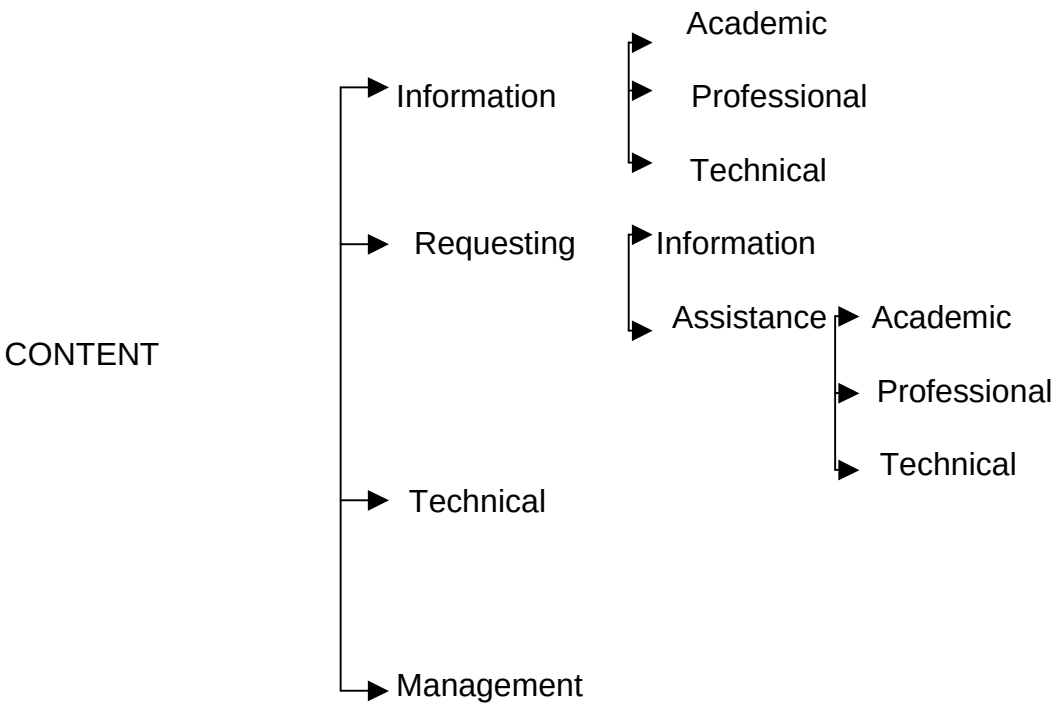




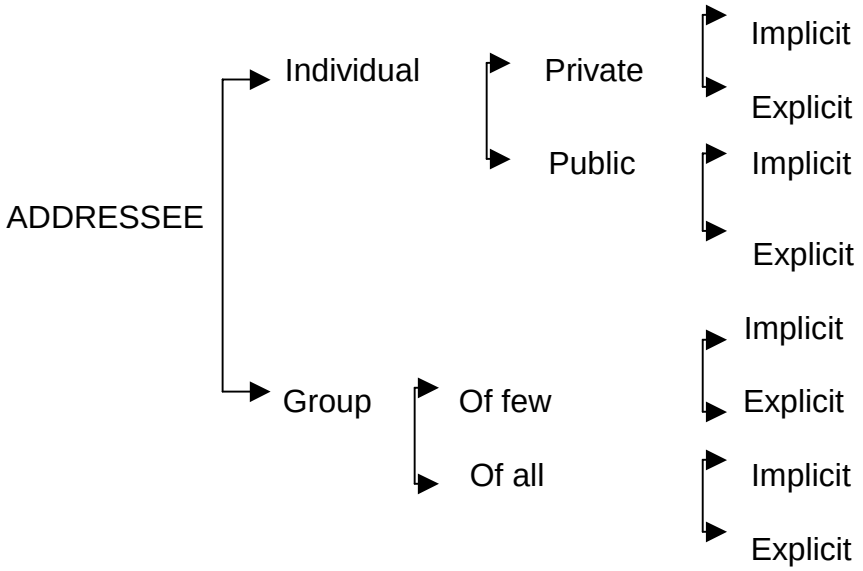


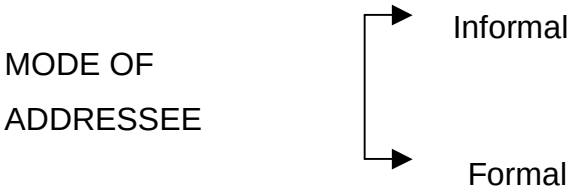

SENDER
Informant
Inquirer
Expert

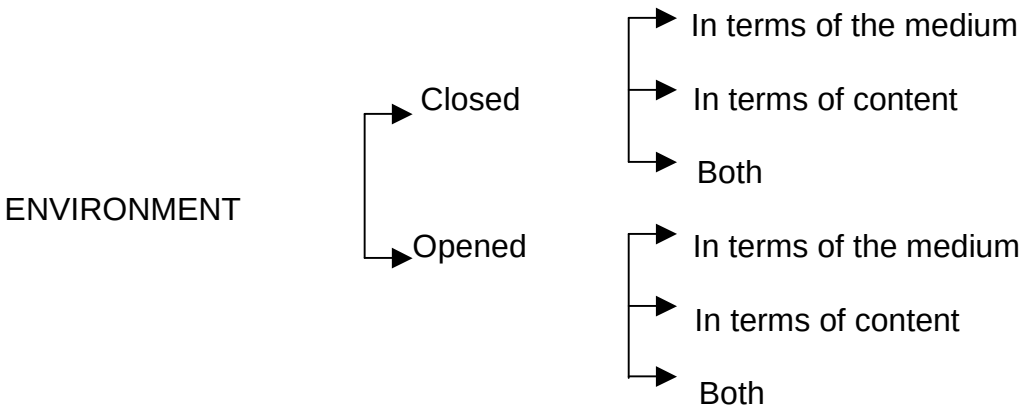

POSITION IN THREAD
Inaugural
Reply

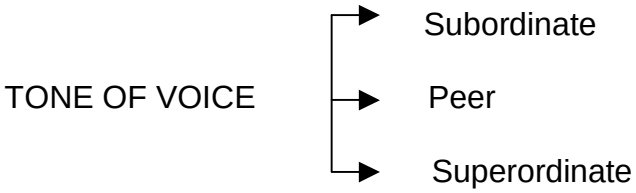

CONTENT
Information
Academic
Professional
Technical
Requesting
Information
Assistance
Academic
Professional
Technical
Technical
Management

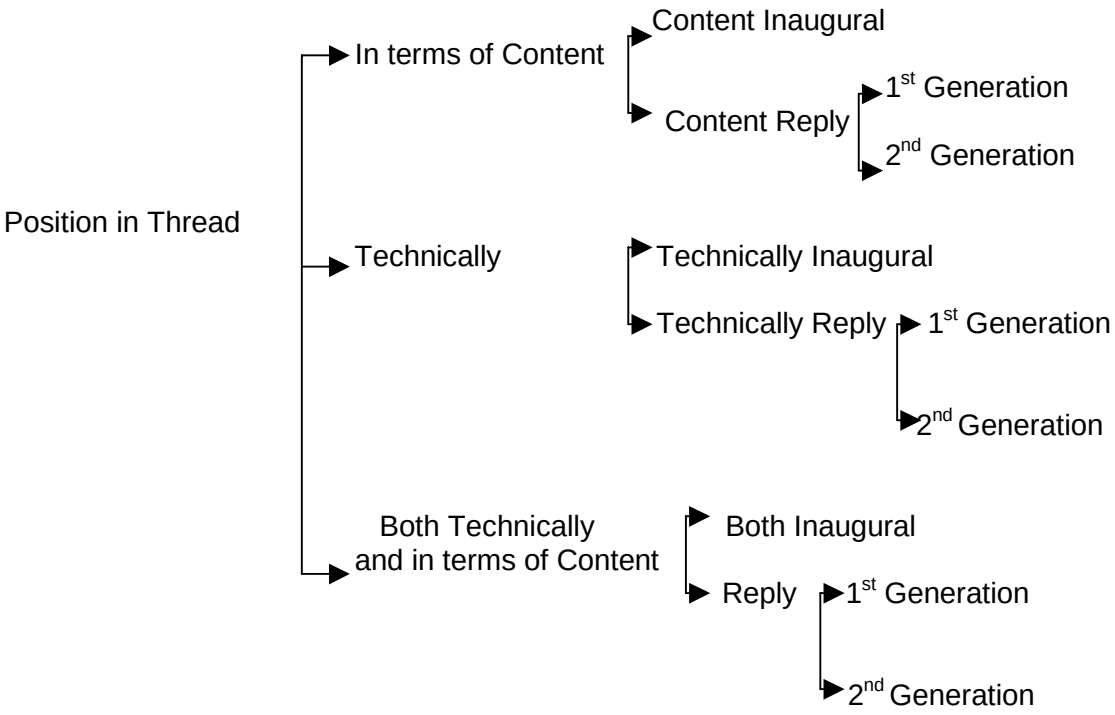
APPENDIX 4: Final analysis scheme of the coding of the messages

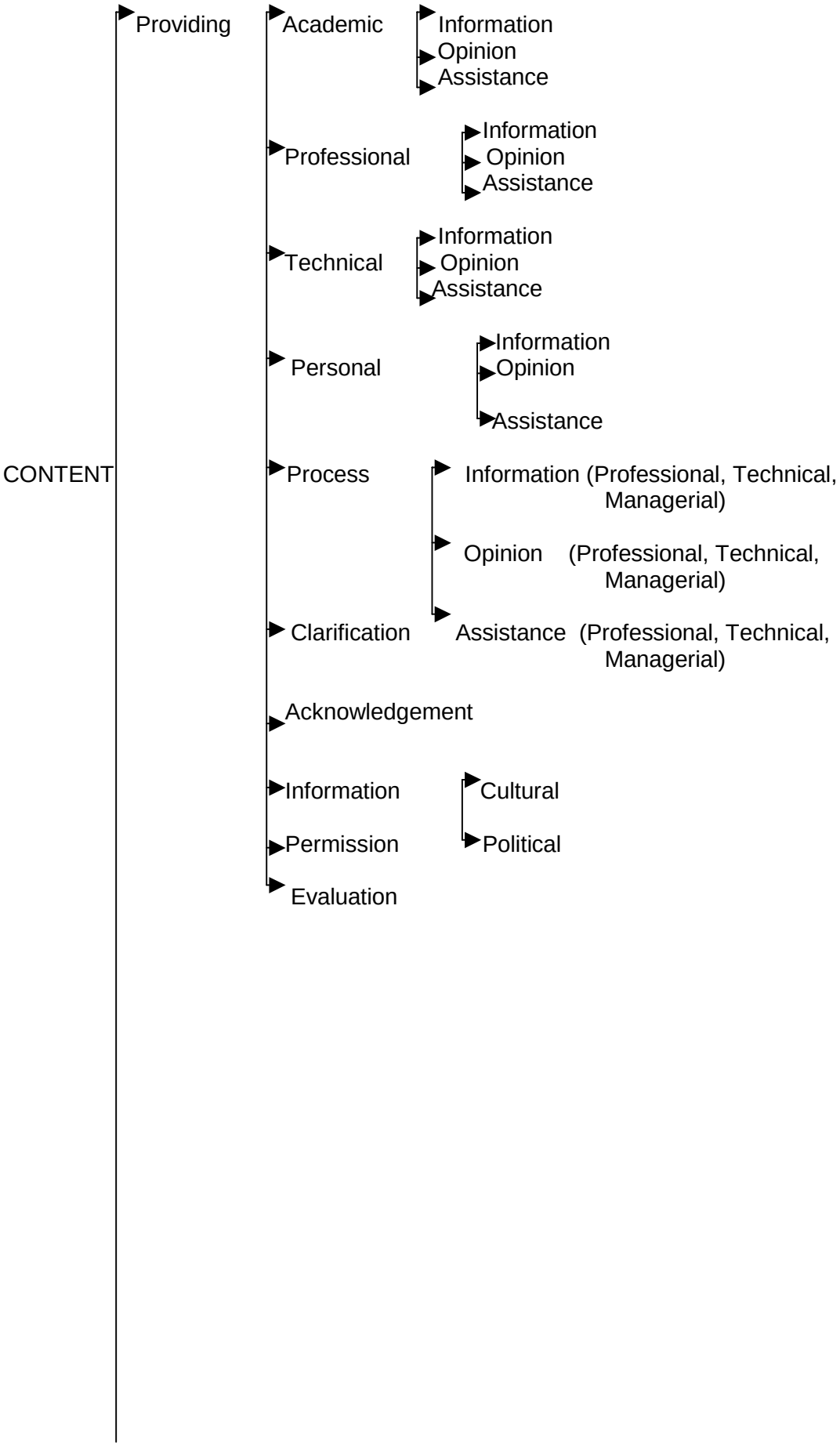


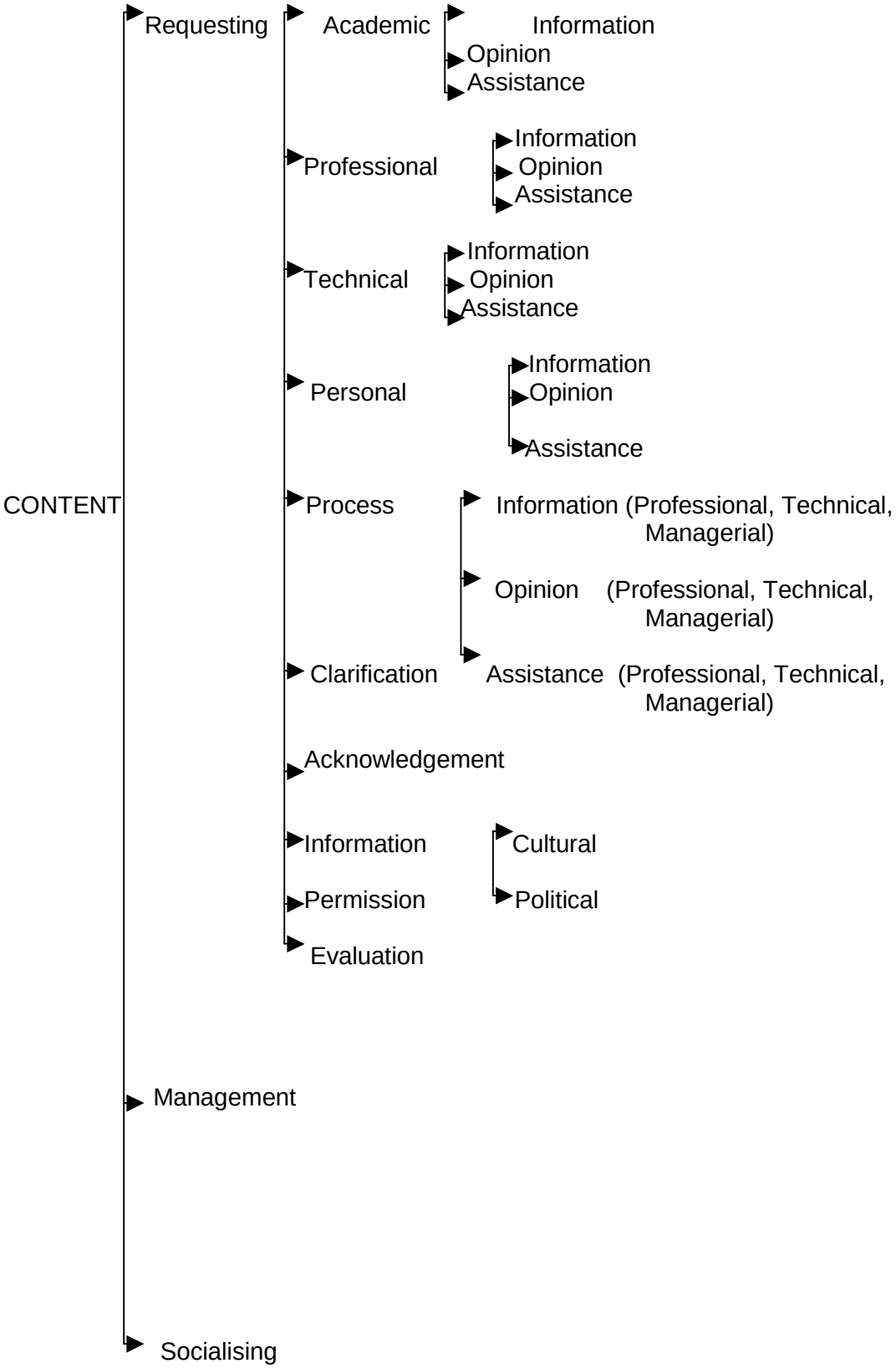

MODE OF
ADDRESSEE
Informal
Formal


ENVIRONMENT
Closed
Opened
In terms of the medium
In terms of content
Both
In terms of the medium
In terms of content
Both


TONE OF VOICE
Subordinate
Peer
Superordinate


Position in Thread
In terms of Content
Content Inaugural
Content Reply
1st Generation
2nd Generation
Technically
Technically Inaugural
Technically Reply
1st Generation
2nd Generation
Both Technically
and in terms of Content
Both Inaugural
Reply
1st Generation
2nd Generation


CONTENT
Providing
Academic
Information
Opinion
Assistance
Professional
Information
Opinion
Assistance
Technical
Information
Opinion
Assistance
Personal
Information
Opinion
Assistance
Process
Information (Professional, Technical, Managerial)
Opinion (Professional, Technical, Managerial)
Clarification
Assistance (Professional, Technical, Managerial)
Acknowledgement
Information
Cultural
Permission
Political
Evaluation


CONTENT
Requesting
Academic
Information
Opinion
Assistance
Professional
Information
Opinion
Assistance
Technical
Information
Opinion
Assistance
Personal
Information
Opinion
Assistance
Process
Information (Professional, Technical, Managerial)
Opinion (Professional, Technical, Managerial)
Clarification
Assistance (Professional, Technical, Managerial)
Acknowledgement
Information
Cultural
Permission
Political
Evaluation
Management
Socialising

APPENDIX 5: Message with formal mode of addressee

Dear Colleagues,

I write here to ask for your help. I am going to conduct a research on the use of CMC in second language learning among university students in Hong Kong for my dissertation. An asynchronous computer conferencing between native English-speaking students from our course (MA in ICT) and students from in-service English course of Hong Kong Institute of Education will be tentatively conducted in March. I am now looking for 6 native English-speaking volunteers to take part in the study.

The participation does not mean large amount of workload. You are expected to exchange ideas related to issues on ICT in learning and teaching, make linguistic comments on the messages written by Hong Kong buddies and complete pre- and after task questionnaires (approximate 15 questions each).

You will find this participation useful as it is a great chance to explore CMC internationally.

There are two preliminary phases in the study. The first phase is the analysis of section of existing e-group discussion, in particular for the conversation between native and non-native English speakers. It aims to see whether language ever becomes a topic for discussion.

In the second phase, I will ask the 6 volunteers to make brief linguistic comments on short e-texts written by non-native speakers.

I will try to talk to you face-to-face regarding my proposal, but any comments or reservation or expression of interest are highly appreciated.

Lastly, thank you for your participation in advance!

Best wishes, Ann Lee.

APPENDIX 6: Message with superordinate toe of voice

If like me you got tired very quickly of all those eGroups.com emails in your inbox, then do what i did and change your profile so that you get either only a single daily 'digest' email of the message board activity or switch off the email altogether and stick with the web based board.

- go to the MAinICT home page
- sign in (top right). This will take you back to the MAinICT page
- click 'My Groups' on the top left (toolbar)
- select the digest type from the drop down list on the right.

cheers,

Daniel.

APPENDIX 7: The quantitative analysis of the MAinICT e-group

Addressee n=403	Number of messages	
Individual Private Implicit	13	(3.2%)
Individual Private Explicit	46	(11.4%)
Individual Public Implicit	16	(3.9%)
Individual Public Explicit	51	(12.6%)
Total	126	(31%)
Group of Few Implicit	7	(1.7%)
Group of Few Explicit	11	(2.7%)
Group of All Implicit	38	(9.4%)
Group of All Explicit	221	(54.8%)
Total	277	(69%)

Mode of Addressee n=403	Number of messages	
Informal	374	(92.8%)
Formal	28	(6.9%)
Not coded messages	1	(0.3%)

Position in thread n=403	Number of messages	
In term of Content-Inaugural	6	(1.5%)
In terms of Content-1st gen. reply	17	(4.2%)
In terms of Content-2nd gen. reply	5	(1.2%)
In terms of Content-3rd gen. reply	4	(1%)
In terms of Content-4th gen. reply	5	(1.2%)
In terms of Content-5th gen. reply	1	(0.2%)
In terms of Content-6th gen. reply	1	(0.2%)
No coding in terms of content	2	(0.5%)
Total	41	(10%)
Technically-Inaugural	24	(5.9%)
Technically-1stgen.reply	10	(2.5%)
Technically-2ndgen.reply	5	(1.2%)
Technically-3rdgen.reply	2	(0.5%)
Total	41	(10%)
Both inaugural	189	(46.9%)
Both 1st gen. Reply	113	(28%)
Both -2nd gen. reply	36	(8.9%)
Both –3rd gen. reply	8	(1.98%)
Both –4th gen. reply	4	(1%)
Both –5th gen. reply	3	(0.7%)
Both-6th gen. reply	2	(0.5%)
Both –7th gen. reply	2	(0.5%)
Both –8th gen. reply	1	(0.2%)
Both –9th gen. reply	1	(0.2%)
Both-10th gen. reply	1	(0.2%)
Both –11th gen. reply	1	(0.2%)
Both –12th gen. reply	1	(0.2%)
Total	362	(90%)

Opened Environment n=403	Number of Messages	
Opened in relation to the medium	56	(3.9%)
Opened in relation to the course	59	(14.6%)
Opened in relation to both	142	(35.2%)
Total	257	(63.8%)

Closed environment n= 40	Number of Messages	
Closed in relation to the medium	50	(12.4%)
Closed in relation to the course	64	(15.95%)
Closed in relation to both	32	(7.9%)
Total	146	(36.2%)

Tone of Voice n = 403	Number of Messages	
Subordinate	2	(0.5%)
Peer	319	(79.1%)
Superordinate	51	(12.6%)
Not codable messages	31	(7.7%)
Total	403	(100%)

Content/ Providing n=403	Number of Messages	
Academic Information	21	(5.2%)
Academic Opinion	7	(1.7%)
Academic Assistance	5	(1.2%)
Total	35	(8.7%)
Professional Information	26	(6.4%)
Professional Opinion	17	(4.2%)
Professional Assistance	0	0.0
Total	43	(10.7%)
Technical Information	20	(5%)
Technical Opinion	2	(0.5%)
Technical Assistance	9	(2.2%)
Total	31	(7.7%)
Personal Information	21	(5.2%)
Personal Opinion	6	(1.5%)
Personal Assistance	0	0.0
Total	27	(6.7%)
Process-Information-Technical	15	(3.7%)
Process-Information-Professional	1	(0.2%)
Process-Information-Managerial	14	(3.4%)
Total	29	(7.2%)
Process-Opinion-Technical	0	0.0
Process-Opinion-Professional	0	0.0
Process-Opinion-Managerial	10	(2.5%)
Total	10	(2.5%)
Process-Assistance-Technical	1	(0.2%)
Process-Assistance-Professional	0	0.0
Process-Assistance-Managerial	0	0.0
Total	1	(0.2%)

Content/ Providing n=403	Number of Messages	
Acknowledgement	25	(6.2%)
Clarification	17	(4.2%)
Permission	8	(2%)
Evaluation	6	(1.5%)
Cultural Information	2	(0.5%)
Political Information	1	(0.2%)
Content/Providing Total	235	(58.2%)

Content/ Requesting n=403	Number of Messages	
Academic Information	7	(1.7%)
Academic Opinion	0	0.0
Academic Assistance	5	(1.2%)
Total	12	(3%)
Professional Information	0	0.0
Professional Opinion	9	(2.2%)
Professional Assistance	3	(0.7%)
Total	12	(3%)
Technical Information	3	(0.7%)
Technical Opinion	4	(1%)
Technical Assistance	4	(1%)
Total	11	(2.7%)
Personal Information	1	(0.25%)
Personal Opinion	1	(0.25%)
Personal Assistance	0	0.0
Total	2	(0.5%)
Process-Information-Technical	6	(1.5%)
Process-Information-Professional	0	0.0
Process-Information-Managerial	5	(1.2%)
Total	11	(2.7%)

Content/Requesting n=403	Number of Messages	
Process-Opinion-Technical	0	0.0
Process-Opinion-Professional	0	0.0
Process-Opinion-Managerial	4	(1%)
Total	4	(1%)
Process-Assistance-Technical	2	(0.5%)
Process-Assistance-Professional	0	0.0
Process-Assistance-Managerial	0	0.0
Total	2	(0.5%)
Acknowledgement	0	0.0
Clarification	16	(4%)
Permission	1	(0.25%)
Evaluation	9	(2.2%)
Cultural Information	0	0.0
Political Information	0	0.0
Content/Requesting Total	80	(19.8%)

Content/Socialising n=403	Number of messages	
Total	47	(11.7%)

Content/Management n=403	Number of messages	
Total	41	(10.2%)

APPENDIX 8: A paradigm of an interaction with development of discussion in another e-group

Inaugural message:

Hi all,
I have what I think is one way of distinguishing between microworlds and simulations:

- Microworlds allow you to determine both the parameters of objects (like number, size, location, colour etc) and how the object functions, as in what it actually does and how it relates to other objects.
- Simulations only allow you to change the parameters/properties of the objects being manipulated. Even if you go on to create larger objects using smaller objects, like towns or nations in Civilisation, and even if the behaviour of these larger objects is highly complex, it's behaviour still depends on the interactions of the many parts it is made up of and that behaviour is out of our control.

So we can alter simulations by changing parameters/variables, but not by changing the function of the objects and/or the number & type of parameters to these functions, which is precisely what we *can* do with microworlds and it is this feature of microworlds that reduces the goal-orientedness of the environment, i.e., it is less scaffolded (where I define Vygotskian scaffolding as explicit goal-orientedness constructed by a relative expert). And reduction of scaffolding allows the microworld to be used more expressively and makes it particularly good for art, which in turn makes it a far more intrinsically motivating environment, an aim Papert specifically expressed in 'Mindstorms' when talking about 'soap-culture math'.

Yet, we don't have ultimate control over the functionality of objects in microworlds. If we did, we would be able to make a turtle do anything, (like word processing or emailing!) which clearly we can't do. We are restricted to a set of commands with turtles, which are themselves functions, written by the LOGO developers, to interface between us and the underlying program, written in LISP, C, Visual Basic etc. This is why the difference between microworlds and simulations can seem so arbitrary, I think; it's not that in one environment we have control and in another we don't, it's that the difference is a matter of degree.

Sorry, I don't mean to be techie about it, but it's hard to articulate otherwise.

Please let me know what you think...have I got totally the wrong idea???

Best Regards,
Daniel.

1st generation of reply

Daniel,
I don't think you can argue that a microworld is any less goal oriented than a simulation. Microworlds, at least the one's we have examined, were developed with specific pedagogical goals in mind. For example Papert makes the claim that the mathematical skills children use in LOGO (turtle graphics) will be transferred to a school based maths environment, the goal is maths education. It was developed for this purpose and thus has a directional nature. I would argue therefore that it is a scaffolded environment. Why can't we do anything we like with the turtle? If we could than the goal would be one of our own choosing. The environment needs to be limited in order for the goals of the software developers to be realized... for the scaffolding to take place. Both environments are goal oriented. Yes you can make distinctions based on the amount maneuverability and personal relevancy the user has in reaching that goal, but ultimately the user is still limited to the environment and rules that were set by the programmer.

Maybe?????
Anthony

2nd generation of reply

OK, fair enough. How about if we say that simulations have more particular goals than microworlds. Yes, microworlds do have pedagogic goals, but these are different kinds of goals from SimCity etc., which has a very specific goal of, for example, defeating other civilisations, creating a happy population etc. An equivalent for Logo would be to require users to make particular shapes, but this isn't the case. Even _not_ making shapes is a legitimate activity in Logo, because it adheres to a more general goal of adaptive learning.

Both environments are goal oriented. Yes you can make distinctions based on the amount maneuverability and personal relevancy the user has in reaching that goal,
but ultimately the user is still limited to the environment and rules that were set by the programmer.
(snip)

Anthony and I had a chat about this and we came up with the following schema to analyse different types of environment:

Each level of abstraction requires the user to Operate/Navigate in an Environment to create a Product. The Product of each level of abstraction is the Environment of the next level of abstraction up. These are the different possible levels of abstraction:

1. Simulation (SimCity, Call to Power etc)
2. Microworld (Logo, StarLogo, STELLA, StageCast, etc)
3. Language (C++, VB etc.)
4. Assembler
5. Binary code

(An initial question is, if the Product of microworld is the Environment of a Simulation, what is the Product of a Simulation?)

But more than this, we can distinguish between a strong and weak definition of a Simulation. The strong form of a simulation is precisely level 1. Above in the schema but the weak form a simulation corresponds to _any_ environment, whatever level of abstraction.

We also applied a similar logic to a weak definition of a microworld, but I forget, so Anthony, please help me out here!

So, the environment of Logo is in itself a (weak definition of) simulation and this explains the confusion between simulations and microworlds...once we a draw a distinction between a strong and weak definition of simulation, we see how Logo can be a strong microworld and a weak simulation.

I think I remember how we conceived of a strong and weak microworld. A strong microworld is that environment named Papert etc. and a weak microworld is any Environment within which we can Operate to create a Product. Thus, SimCity, Civilisation & DopeWars are (strong) simulations _and_ weak microworlds, but Quake, FlightSim etc are strong simulations but (since the user doesn't create anything) not even weak microworlds. (How does that sound Colin?)

I have attached a file to represent the idea. I have kept it as small as possible as I couldn't make it a GIF file.

Please let us know what you think of these ideas. Do they make sense at all?

Best,
Daniel.

3rd generation of reply:

Dear all,
This is a very interesting conversation. About the goals in a microworld and in a simulation, could we argue that even though microworlds are goal oriented as well as simulations, as Collin suggested, within a microworld we can manipulate the goals up to a certain level, whereas within a simulation this is not possible?

e.g. The goals of LOGO are related to mathematics. We could use LOGO though to design! Whereas in a simulation, we can only build a city, if this is the goal.

What do you think?

PS Since I'll be in Paris I'll probably won't be talking to you for the next few days. Nevertheless, I'm waiting for your feedback.

Maria

4th generation of reply:

Hi Maria,
What you wrote made a lot of sense to me but I have couple of questions...
What is a goal and how do the goals differ in the two environments? What do we call the level up to which we can manipulate microworlds? I have offered a characterisation of this level as one in which you can manipulate both the functions and the parameters passed to these functions, but perhaps this is overly programming-based.

Also, do you think the goals of Logo are related only to mathematics? Couldn't we also include design, problem solving skills, algorithmics, logic and maybe even art? And how about StarLogo? This seems less about maths and more about facilitating a way of thinking, i.e. a decentralised way, which is important for sociology, biology and even politics/economics.

I look forward to your reply,
Best,
Daniel.

5th generation of reply:

Hi Daniel,
I totally agree with you. In accordance to Collin's suggestion that Logo is goal oriented, you identified a number of goals not necessary very similar to each other. Could you identify so many different orientations (goals) for SimCity, for example? I guess by saying that we can manipulate goals up to a certain level, I meant within the more or less flexible boundaries of the program, which is pretty close to what you suggested (programming-based).

Could the flexibility of goals available within a program be a variable that distinguishes simulations from microworlds?

What do you think?
Maria

6th generation of reply:

I think we need to consider other simulations besides the simcity, civilization, which do make any specific educational claims and look at some that do. The bcc history site has a simulation of the battle of waterloo and the battle of hastings. This is a learning site. I think it would be interesting to look at the goals that these Sims might be trying to achieve. (I'll post the URL, I'm not able to look for it at the moment). I think the identification of goals is a bit irrelevant in that if we follow a constructivist... sorry have to go, I'll finish my thought soon.

Anthony

7th generation of reply:

Hello All!
I've been following the discussion from distant shores but was not able to join in. Your comments are very interesting, particularly about the relationship between goals and "types" of applications. It relates to the questions that were discussed with Paul about the positioning of software applications in specific types of paradigms or discourses, (e.g. microworlds, simulations, tools etc) and the consequent roles for "users". The question about "goals" is very interesting. Whose goals are being referred to? Software designer, teacher, student? How do they define "learning paradigms"?

I feel a bout of Activity Theory coming on during the seminar on 13th June!! Incidentally, this e-mail is not meant to indicate that "Sir" is taking over the discussion :-) I'm happy for us to continue as we are.

Happy conferencing to us all!
Ian

APPENDIX 9: Interaction that almost caused a “flame”

1st generation of reply:

Hi Helen,
I’ m not sure about your university experience but much of the best learning (and most relevant) does not happen in the classroom...
See you soon! Plink!

Chris

2nd generation of reply:

That means what Chris?
Because I lived some periods of my life on the streets, you know! Before I got a job and try to move a bit forward... my family is a really poor one, and imagine my efforts to get out of the misery... So do we know each other or not? Probably not since I don’t even know myself yet... Ourselves could surprise us in many different ways, in a 'good' or a 'bad' even better 'useful' or not 'useful ones...

My academic experience is the same with the street one, since I used to teach the Internet in a Postgraduate course for a couple of years. Actually, I build the module because I needed the Internet and I didn’t have money to get one at home!!!

Favourite game of last week: Alice in the Wonderland, this week: Oni!!! Try this one Daniel... She kicks and punches in really good combinations.... a good way not to think dear!

PS perhaps one day we should talk about netiquettes, perhaps we should have talked about it before we started e-mailing each other...
Helen

APPENDIX 10: Interaction suggesting that messages were read by tutors as well

Inaugural message in the e-groups

All,
There are a few among us who don't have serious access to computers, i.e. they are limited to the library machines. This has the disadvantage of not being able to install software, of not being able to use voice (in a quiet library) and having restricted hours of access, especially on the weekends. The issue is especially relevant to ICT in education students who really need to use this time to become familiar with the latest technologies. Recent experiments in online conferencing have highlighted this problem.

We all know (and I think sympathise) with the position of the Institute and the department(s) that they would like to, but cannot afford to give us our own PCs. However, I think that the Institute should be able to come up with some other imaginative solutions to a very real problem.

For instance, can the Institute not bulk-buy computers from vendors and then sell (and pass on the savings) to us? If not, can't the Institute negotiate a rental/leasing arrangement with vendors, so that we can lease/rent on discounted terms?

These are just a couple of ideas, but I'm sure there are better ones. The point is, I think the Institute should use its purchasing power and organisational memory to at least assist its students in gaining serious access to computing facilities.

Does anyone agree/disagree/care? I have created a poll for this purpose, so please vote (take note Florida!)

Regards,
Daniel

Private message from the course leader:

I have heard rumours of requests for hardware and software resources – but actually no one has asked me for anything, so I can honestly say that no request has been denied! Resources for the MA in ICT in Ed course are my responsibility as Course Leader and so requests should be directed to me.

If there are requests for resources, then I can see what can be done, or at least I can tell you the real reason why they cannot be met.
Harvey

APPENDIX 11: Interaction between a tutor and a colleague

Inaugural message in the e-groups:

Thank you for your response, Helen. i should admit that your address got onto my alias for my advisees by mistake, so you should not have received my message. Nevertheless, I hope that you found the exercise to be useful. i would suggest that you need to give some careful consideration to the details of a possible empirical setting before proceeding any further with the theoretical development. That will enable you to establish two bases for your engagement with the literature: i) empirical work concerning your setting and related settings and ii) the theoretical positions that you mention. A discussion of this literature should then culminate in a more sharply defined research question so that you can get onto the operational planning of your work. You should discuss this with your advisor and forward to him the above comments.
Paul.

1st generation of reply:

Dear Paul,
Thank you very much for your feedback, actually it is quite similar with the one I got from my advisor. My problem is that the computer as such, has not been viewed as a mediated tool>>> we use tools to get amorphous material and create something with shapes, constructions, beauty, something that either we create or is hidden in this amorphous material in the first place (as Michelangelo and you have suggested). When we use ready made products/programmes we get mainly automative activities and not informative ones especially when we talk about activities within the school environment. I try to drive my reading this way and actually I have found a couple of researches but they do not provide the actual empirical setting so far> but the day is still young... The question that I had in mind in the first place was whether the computer could be used as exactly what I described before, a tool that given in SCLEs provides the kids the possibility to create their own masterpieces similar to their own interests. According to the theory of multiple intelligences (Gardner) everyone has something that needs to form and elaborate... Perhaps it is the reason why Picasso suggest that we have to go back to our childhood...

Thank you very much again,
I will continue sending information concerning my process (if there is one),
Helen.

APPENDIX 12: Interviewees' opinion on whether some people were tending to run the groups

(The interviewee is represented with the letter A whereas the interviewee is represented with the letter B).

I think that some people thought they were…they were in charge…they were the moderators I felt at the beginning…(Interview with Anthony)

A: were some people tending to run the groups?
B: Definitely yea…you'd know that you would get two or three e-mails a day from two or three people…they felt very happy communicating, they felt very happy to lead the discussion. (Interview with Todd)

A: Were some people tending to run the thing?
B: …
A: Were some people moderating the group?
B: No, see actually Helen she only took the role to make sure everyone were joining the group but after that I don't think there's anyone to facilitate the group, so actually we are quite self-initiated…if you don't want to post a message, ok! No one will force you. (Interview with Ann Lee)

…if people dominate at the beginning and constitute themselves as a moderator then I think that's negative, if this person is explicitly a moderator as if you are a lecturer or something like that would be different…would be part of the rules but if it's open to everyone one person should not dominate.
A: Do you thing this is what happened in the e-groups?
B: Absolutely yea, completely…one person…I explicitly tried not to contribute too much, I didn't want to, perhaps I did but my contributions involved inviting other people to speak…consciously inviting other people to speak…not making too many points and lessening the impact of my own contribution…Helen, I think contributed too much probably due to being too enthusiastic about the whole thing…and there's enthusiasm and there's contracting other people's sense of ownership. (Interview with Daniel)

B: First I think Helen and Daniel they were really active…I thought they contributed a lot…many messages, especially Helen and Daniel sent like many information about the other websites…both of them were very active but later I don't think they were that much active, anyway. (Interview with Jisu)

B: I think it might were, but it was not that obvious. Some people might wanted to influence the students concerning specific thoughts about specific subjects and tried to persuade them towards their opinion if we define these actions as tendency to run and lead the group. We didn't have a coordinator and this might was a problem that gave a blow to the 'flames' or contributes to the desktop spawned silence in some occasions. As far as I remember there was a period of death and resurrection of the group. (Interview with Helen)

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