

CONTRIBUTION TO SYMPOSIUM ON:  
**Methodologies for researching networked learning**

TITLE OF PAPER:  
**Communicating Science: Content and Interaction analysis of CMC**

AUTHORS:  
**Canan Tosunoglu Blake<sup>^</sup>**  
**Aysenur Yontar-Togrol\***  
**Eileen Scanlon<sup>^</sup>**  
**Rick Holliman\***

INSTITUTION:  
**<sup>^</sup>Institute of Educational Technology**  
**\*Centre for Science Education**  
**The Open University**

SESSION TYPE:  
**Individual paper**

NAME AND ADDRESS OF CONTACT PERSON:  
**Canan Tosunoglu Blake**  
**Institute of Educational Technology**  
**The Open University**  
**Walton Hall**  
**Milton Keynes MK7 6AA**

TELEPHONE: **01908 654966**  
EMAIL: **c.tosunoglu@open.ac.uk**

NUMBER OF WORDS: abstract only 587

FIVE KEY WORDS:  
**computer conferencing, CMC, collaborative learning, content analysis, science communication**

PROPOSAL:  
**See next page**

# Communicating Science: Content and Interaction Analysis of CMC

Canan Tosunoglu Blake <sup>^</sup>  
Aysenur Yontar Togrol <sup>\*</sup>  
Eileen Scanlon <sup>^</sup>  
Richard Holliman<sup>\*</sup>

<sup>^</sup>Institute of Educational Technology  
<sup>\*</sup>Centre for Science Education  
The Open University

## Abstract

In this study we are presenting the results, to date, of a research project aimed at developing a framework for analysing the computer conferencing contributions. The setting is online seminars of a graduate level course offered by the Faculty of Science at the British Open University. The course is entitled 'Communicating Science' and makes use of information and communication technologies to allow students to engage in discussions and access the Web for information.

Computer-mediated conferencing (CMC) can support high levels of "responsive, intelligent interaction" between students and teachers. (Rourke, Anderson, Garrison and Archer, 2001). At the same time it provides a flexible, any time, any place means of interactive learning for students who may be geographically disparate and with different time commitments. The flexibility offered by these technologies and the potential of supporting students with collaborative, interactive learning activities places CMC at a high-ranking point in the agenda of distance education institutions.

Nevertheless researchers and providers of open and distance education need to investigate the nature of teaching and learning in this environment and develop instructional models to use the technology effectively.

Computer conferencing at the OU has a long history, starting in 1988 (Mason and Kaye, 1989). The investigation presented in this paper has collected data over three years of the presentation of the course and indicates valuable outcomes from computer conferencing (using FirstClass) in the course such as active participation, peer interaction, multiple perspectives and divergent thinking

The paper will focus on the strategies adopted in using computer conferencing to develop students' understanding of the scientific controversy and present the findings of the content analysis carried out on the transcripts of one of the 'seminar' conferences in the course. The topic of the seminar conference was global warming and why and how the global warming is a controversial issue.

We carried out three different analyses on the transcripts of student contributions:

- Participation analysis to determine individual participation profiles;
- Content analysis to establish
- Interaction analysis to look for patterns of contributions in the whole seminar discussion

Content analysis is a methodical and reliable way of labelling and classifying content into a theoretically meaningful set of categories. When used in the context of computer conferencing it can provide information on how learners use the medium to refine and present their ideas, and how collaborative their learning is

Our analyses involved a thorough reading of all conference messages (saved in electronic form) by two researchers independently. They coded and classified student contributions, using a system developed for an earlier study as a starting point (Jones, Scanlon and Blake, 2000)). We also marked all contributions responding to (overtly or covertly) another message to produce a representation of the interaction in the conference which was one of the focal points of the study.

In our presentation we will present the results of our analysis including reliability concerns and discuss the issues surrounding the analysis of computer conferencing in general. We will also reflect on our experience in the light of the findings of the study and recommend strategies that can be adopted for successful computer conferencing.

## References

Jones, A., Scanlon, E. and Blake, C. (2000) Conferencing in communities of learners: examples from social history and science communication, *Educational Technology & Society* 3(3), ISSN 1436-4522 available at: [http://ifets.ieee.org/periodical/vol\\_3\\_2000/c02.html](http://ifets.ieee.org/periodical/vol_3_2000/c02.html)

Mason, R., Kaye, A. (eds.) (1989) *Mindweave: Communication, Computers and Distance Education*. Oxford, Pergamon.

Rourke, L. Anderson, T. Garrison, D. R. and Archer, W. (2001). Assessing Social Presence In Asynchronous Text-based Computer Conferencing. *Journal of Distance Education/Revue de l'enseignement à distance*: 14, 2 [iuiocode: <http://www.icaap.org/iuicode?151.14.2.6> ]