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EDITORIAL

This issue of DEOSNEWS is comprised of reviews and announcements of publications about computer-mediated communication used for education. The publications are addressed in the following sequence:

Burge, E. J. 1992. Computer Mediated Communication and Education: A Selected Bibliography. Toronto, Canada: Ontario Institute for Studies in Education.

Wells, R. 1992. Computer-Mediated Communication for Distance Education: An International Review of Design, Teaching, and Institutional Issues. University Park, Pennsylvania: The American Center for the Study of Distance Education.

Waggoner, D. ed. 1992. Empowering Networks: Computer Conferencing in Education. Englewood Cliffs, New Jersey: Educational Technology Publications.

Rapaport, M. 1991. Computer Mediated Communications: Bulletin Boards, Computer Conferencing, Electronic Mail, and Information Retrieval. New York: John Wiley & Sons.

Kaye, A. R. ed., in press. Collaborative Learning through Computer Conferencing: The Najaden Papers. Heidelberg: Springer-Verlag.

Paulsen, M. F. in press. From Bulletin Boards to Electronic Universities: Distance Education, Computer-Mediated Communication, and Online Education. University Park, Pennsylvania: The American Center for the Study of Distance Education.

In addition, Linda Harasim has informed DEOSNEWS that she is working on two books that should be available in 1993:

Harasim, L. ed. in press. Global Networks: Computers and International Communication. Cambridge, MA: MIT Press.

Harasim, L., S. R. Hiltz, L. Teles, and M. Turoff. n.d. Learning Networks: A Guide to Knowledge Connections. Still not committed to a publisher.

Two Reviews

by Gerald Santoro  
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Burge, E. J. 1992. Computer Mediated Communication and Education: A Selected Bibliography. Toronto, Canada: Ontario Institute for Studies

in Education.

From the initial acceptance of computer-mediated communication (CMC) as a field of study, perhaps five to eight years ago, a major problem has been the lack of a large body of publication from which to draw references, ideas and so on. Luckily this lack has not prevented educators or researchers from doing applied research in the field. It has, however, made it rather difficult to plan scholarly research that would draw upon previous efforts.

Elizabeth Burge and her colleagues have risen to address this lack by compiling a booklet containing almost 400 references to articles about, or relating to, CMC. A few of these references are themselves bibliographies that can lead to still more useful references.

By far the most important feature of the Burge booklet is the fact that the references are presented in two forms. The first form is a standard alphabetical (by author) listing. The second form is a categorical listing in the following topical areas: general educational contexts, institutional educational contexts, participant/learner perspectives, tutor/moderator perspectives, messaging, tools and techniques, and non-educational contexts.

Besides CMC, the other common thread binding the references contained in this booklet is the emphasis on educational application. The reader will not find reference to articles on TCP/IP protocols, specific LAN-based conferencing software, network security, training issues or similar 'technical' issues. The reader will find reference to articles on the application of this technology to education.

In summary, I consider this booklet to be a requirement for anyone seriously considering CMC research or development of CMC support in an instructional setting. For too long educators and researchers have been applying CMC without much awareness of the efforts of others. This booklet admirably addresses this situation and creates an excellent foundation upon which to build.

Wells, R. 1992. Computer-Mediated Communication for Distance Education: An International Review of Design, Teaching, and Institutional Issues. University Park, Pennsylvania: The American Center for the Study of Distance Education.

Many problems face instructors considering the addition of CMC technology to their courses--whether as a primary delivery system or to augment and support the traditional classroom. Two important problems are (a) getting information on how to integrate CMC into an existing course, and (b) getting advice on institutional and 'overhead' matters that could make the experience a success or a failure.

Rosalie Wells, in the ACSDE Research Monograph Number 6, addresses these issues as well as providing readers with references to various implementations of educational CMC.

The first part of this Monograph strikes right at the heart of the matter of successful CMC use. Its title is: "Designing a Course to Maximize the Potential of CMC." In this part the reader is encouraged to think about the pedagogical issues regarding educational CMC--hopefully in relation to their own potential application.

A subset of the issues raised includes: how to encourage the use of CMC by students, pacing techniques, enrollment limits and appropriate class size, and the use of CMC transcripts.

My only criticism of this section, and it is a minor one, is that Ms. Wells does not emphasize strongly enough the need for faculty to consult

with technical specialists in developing CMC-supported courses. A number of institutions have established groups such as the Penn State 'Teaching and Learning Technologies Group' whose intent is to help faculty develop courses that utilize technology effectively. It is during the course design stage that this help can be most useful.

The second part of this Monograph discusses teaching considerations. These include areas such as instructional responsibilities, communication challenges to instructors and students, effective teaching style, participation rates, online teaching and instructional techniques. Of course not all possible teaching considerations are covered, but there are enough to encourage readers to think about their own teaching style and the constraints or opportunities for change that may result when CMC is added to their course. Hopefully this will prompt some readers to attempt creative approaches to teaching.

The third part of this Monograph deals with the extremely important issues of institutional environment. Such issues include computer access, standardization of hardware/software, skills acquisition, user support, training and cross-cultural effects. Additional discussion is given to ways that an instructor might market the concept of CMC-supported instruction at her/his own institution--given that the cost of doing so is lower per-class when an institution-wide approach is followed.

The fourth part of this Monograph provides an overview of the range of CMC implementations internationally. Ms. Wells is careful to point out that this represents only a small sample of the CMC implementations that currently exist. However, the list provided is an ample starting point for readers interested in examining how educational CMC is done at other institutions.

In conclusion, the Rosalie Wells' Monograph is an extremely useful resource for instructors thinking about applying CMC to a course, or improving a course already employing CMC. This Monograph does not provide all of the answers, nor does it even ask all of the possible questions regarding practical CMC use, but it is an excellent starting point that will encourage many to think about effective application of CMC.

#### Two Books on Computer-mediated Communication

Reviewed for CAUSE/EFFECT Volume 15 Number 2 Summer 1992

by Morten Flate Paulsen

This review is published in DEOSNEWS with permission from Julia A. Rudy, Editor of CAUSE/EFFECT--an American magazine about the management of information technology on college and university campuses. For more information about CAUSE/EFFECT, please contact Julia A. Rudy via e-mail JRUDY@CAUSE.COLORADO.EDU or telephone +1-303-449-4430.

*Empowering Networks: Computer Conferencing in Education*, edited by Michael D. Waggoner (1992), is a 251 page book available from Educational Technology Publications for \$34.95.

*Empowering Networks* comprises ten individual articles describing a variety of successful educational projects based on computer-mediated communication in the U.S. In the introduction, Waggoner states:

The purpose of this book is to capture the experience of some of the major, unique applications of computer conferencing that have been developed in education to date. By describing a wide range of success-

ful uses of this technology, two objectives are served: to encourage further experimentation, and to provide some collected wisdom regarding implementing and maintaining such an enterprise. Such an effort must necessarily be selective, because even at this early stage, many projects have evolved. We have chosen representative applications in the three general areas of educational work: teaching, research, and service. Additionally, we have invited two seasoned practitioners with experience in computer conferencing to reflect broadly on issues of implementation and change in educational organizations.

The first three chapters, dealing with CMC as a communication service for educators, are:

Connecting the University and the Field of Practice: Computer Conferencing in Education at the University of Michigan, by Christine Canning and Karen Swift;

Building an Electronic Culture: The Academical Village at Virginia, by Glen Bull, Judi Harris, and David Drucker; and

Grassroots Networking on Big Sky Telegraph: Empowering Montana's One-Room Rural Schools, by Frank Odasz.

These articles are descriptive rather than reflective. They have few references and little critical analysis, but they are representative and interesting descriptions of contemporary projects. A Survey of Educational Computer Networks (McAfee et al. 1990), listing forty-eight statewide, intrastate, and proposed U.S. networks, shows, however, that the included projects are by no means unique. I found the Canning and Swift article especially important because of its historical description of the influential Confer system.

The next two chapters, which discuss how CMC may be utilized for teaching, are:

Computer Conferencing and Mass Distance Education, by Anthony R. Kaye; and

Instructional Gaming Through Computer Conferencing, by Frederic L. Goodman.

I would like to see more articles on this important issue. The two articles presented are of high quality and they describe two important and impressive pioneer projects. Personally, I especially appreciated Goodman's article, since information about the Instructional Gaming Project is scarce in mainstream CMC literature. On the contrary, the DT200 course has been described in a number of publications (e.g Mason and Kaye 1989).

The three articles included in the research section are:

Empowering Educational Researchers on CompuServe and BITNET, by Jean W. Pierce;

Computer Conferencing as a Support Mechanism for Teacher-Researchers in Rural High Schools, by Lawrence B. Friedman and James McCullough; and

Explicating Expert Opinion: A Case Study of Computer Conferencing Delphi, by Michael D. Waggoner.

The first two articles are grassroot descriptions of projects networking educational researchers. The research aspect is not emphasised, so the

articles are not very different from those presented in the first section of the book. Waggoner presents a detailed and interesting case description on a how the Delphi technique was used in a research project.

The two articles in the section concerned with implementation and change in educational organizations are:

Computer Conferencing: The Causes for Delay, by Donald P. McNeil; and Empowering for Technological Change, by Thomas J. Switzer.

These articles present two practitioners' experiences and views. They include valuable guidelines for implementation of CMC systems based on common sense. The articles lack, however, thorough literature reviews and analyses of previous work.

The book includes a four-page, trivial glossary and a short list of names and addresses of resource people; however, compared to Rapaport's book, these resources are shallow and sparse, almost pathetic.

Computer Mediated Communications: Bulletin Boards, Computer Conferencing, Electronic Mail, and Information Retrieval written by Matthew Rapaport (1991) is a 373 page book published in New York by John Wiley & Sons. I paid \$34.95 for it in a local book store.

Computer Mediated Communications, is a comprehensive and thorough technical book, focusing on the gamut of CMC applications and their features. It emphasises centralized and distributed computer conferencing systems, but it also covers e-mail systems, bulletin board systems (BBS) for microcomputers, and information retrieval systems. In the introduction, Rapaport states:

This book is about computer conferencing software, the original "groupware". When Peter and Trudy Johnson-Lenz coined that term in 1987, they defined it as "Intentional group processes and procedures, plus the software to support them." It was conferencing technology--computer support for communications among groups of individuals for a variety of purposes--that was foremost in their minds. More recently, the term has been extended (properly, I think) to refer to software that supports the development of information content shared by groups of people or provides support for the flow of work as it moves among working groups. Electronic mail and decision support facilities--such as polls, vote compilations, and information retrieval from management information system (MIS) databases--are usually considered a proper part of contemporary groupware technology. All the primary "groupware products" in the marketplace today include an electronic mail component.

Chapter 1 describes the history of CMC. The salient conferencing systems included in the overview are EMISARI, EIES, Confer, Caucus, Participate, PortaCOM, CoSy, and Notepad. As a long term user of PortaCOM, Europe's most used conferencing system, I suggest that the system deserves broader and more accurate attention. An interesting figure shows the timeline of the historical development and the relationship between systems. The Information retrieval systems discussed are Dialog, BRS, and STAIRS. Among the microcomputer bulletin board systems (BBS) reviewed are the seminal CBBS system and the distributed FIDOnet system.

Chapter 2 describes the scope of current CMC use such as cooperative work, educational use, and corporate applications. An important contribution is the discussion of factors contributing to the success of CMC applications.

Chapters 3 and 4 describe the foundation of hardware, operating systems, file systems, application software, and network technology used in CMC systems.

Chapter 5 explores distributed CMC systems, routing mechanisms, and bridging of networks exemplified by FIDOnet and X.400. I would have liked more information about Internet/BITNET, obviously the world's most important distributed system.

Chapters 6 and 7 give an overview of common structures and features of conferencing systems and how these are implemented, discussing user interface, branching, navigation, and selection, while chapter 8 describes how the structures are applied in a host of widespread services, such as BIX, CompuServe, and GENie.

Chapter 9 examines important factors to consider for those who plan to develop a CMC system, purchase a standard system, or contract CMC services from a third-party provider. The chapter includes a list of CMC features that could be used in the decision process and a table that compares features of standard CMC systems. This chapter alone justifies purchase of the book by organizations planning to implement a CMC system. A further source of information is GO MEEC! A Goal Oriented Method for Establishment of an Electronic College (Paulsen 1991).

Chapters 10 and 11 discuss advanced CMC features, technical trends, and social issues, and the appendixes feature useful directories of software and hardware vendors and online services.

## Conclusion

These two books supplement each other. Empowering Networks comprises a collection of interesting, individual, mostly descriptive, grassroots articles about CMC experiences in educational environments. One may criticize some of the articles for their lack of thorough literature reviews and critical analyses of the field. These deficiencies could have been overcome through a comprehensive editorial introduction. The book could, in other words, benefit from some overall perspectives and conclusions linking the ten individual articles together. For further analysis, I recommend Online Education (Harasim 1990) and Computer-Mediated Communication in Distance Education (Wells 1992).

Computer Mediated Communications is the most comprehensive technical book on CMC I have encountered. The book could, however, benefit from some introductory definitions of pivotal terms such as CMC, conferencing, information retrieval systems, etc., Finally, I recommend this book to people who are responsible for purchase, design, implementation, or operation of CMC systems.

## References

Harasim, L. M., 1990. Online Education: Perspectives on a New Environment. New York: Praeger.

McAnge, T. R. et al. 1990. A Survey of Educational Computer Networks. Blacksburg, VA: Virginia Polytechnic Institute and State University.

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

Paulsen, M. F., 1991. GO MEEC! A goal oriented method for establishment of an electronic college. DEOSNEWS 1(2).

Wells, R., 1992. Computer-Mediated Communication for Distance Education: An

International Review of Design, Teaching, and Institutional Issues.  
University Park, PA: The American Center for the Study of Distance Education.

#### Announcement of Two Publications

by Anthony Kaye and Morten Flate Paulsen

Kaye, A. R. ed., in press. Collaborative Learning through Computer Conferencing: The Najaden Papers. Heidelberg: Springer-Verlag.

The 260 page book is prepared as a result of a NATO Advanced Research Workshop held on the sailing ship Najaden during a journey from Copenhagen to Stockholm in August 1991. It is included in the NATO ASI Series, and it can be expected from the publisher in Autumn 1992. The contents is as follows:

Preface: Arne Welin, Captain of the Najaden

Introduction and acknowledgements: Anthony Kaye and France Henri

1 Learning Together Apart: Anthony Kaye

#### Part I COMPUTER CONFERENCING IN PRACTICE

2 Telematic support for in-service teacher training: Cristina Simon

3 Waiting for Electropolis: Morten Soeby

4 Computer-mediated communication in management learning: David McConnell

5 International Online Teams: Elaine McCreary & Madge Brochet

6 Collaborative learning in a large-scale conferencing system: Jesus Rueda

#### Part II WAYS OF UNDERSTANDING ONLINE COLLABORATION

7 Evaluation methodologies for conferencing applications: Robin Mason

8 Content analysis of computer conferences: France Henri

9 A case study approach to evaluation: Michael Waggoner

10 Talking, teaching and learning in network groups: Sara Kiesler

11 Collaborative learning in networked organisations: John Gundry

#### Part III ISSUES IN SOFTWARE DESIGN

12 The challenge of conferencing systems design: Oliver Vallee

13 Metaphors and interface design: Elsebeth Soerensen

14 Human interfaces to promote collaboration: Gary Alexander

15 Towards a hypermedium for collaborative learning?: Alain Derycke

16 Computer conferencing functions and standards: Jacob Palme

17 Hardware and software systems and architecture: Jens Ambrosius

Paulsen, M. F. in press. From Bulletin Boards to Electronic Universities: Distance Education, Computer-Mediated Communication, and Online Education. University Park, Pennsylvania: The American Center for the Study of Distance Education.

This monograph will be available in the beginning of October. In addition to the foreword by Linda Harasim and the afterword by Robin Mason, the publication is divided into three sections. The first two articles, The NKI Electronic College and Teaching Across the Atlantic, describe the

author's experiences from the NKI Electronic College and from Connected Education. The second section includes articles titled Innovative Computer Conferencing Courses and Computer-Mediated Communication in Distance Education around the World. These articles provide examples of the plethora of exciting CMC projects the author has encountered through literature reviews and personal communications. The final section, synthesizing perceptions and theories, presents three articles that compile experiences, conclusions, and predictions for the future. GO MEEC describes a Goal Oriented Method for Establishment of an Electronic College, The Electronic University predicts the development of future electronic universities, and the Hexagon of Cooperative Freedom attempts to establish a distance education theory attuned to CMC.

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