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EDITORIAL

This issue of DEOSNEWS presents a computer scanned version of the final article in my monograph "From Bulletin Boards to Electronic Universities: Distance Education, Computer-Mediated Communication, and Online Education" (Paulsen 1992). The article is a first attempt to develop a theory of distance education attuned specifically to CMC. Focusing on the interplay of independence and cooperation within the dimensions of time, space, pace, medium, access, and curriculum within distance education contexts, it is argued that computer conferencing can foster both freedom for the individual and group cooperation.

The Hexagon Of Cooperative Freedom:
A Distance Education Theory Attuned to Computer Conferencing

Morten Flate Paulsen

Introduction

This article presents a distance education theory based on existing theoretical perspectives and discusses how it applies to computer conferencing. In an analysis of existing theories of distance education, Keegan (1988a, 30) concluded that six major elements define a distance education program:

- The separation of teacher and learner, which distinguishes it from face-to-face learning;
- The influence of an educational organization, which distinguishes it from private study;
- The use of technical media, usually print, to unite teacher and learner and carry the educational content;
- The provision of two-way communication so that the student may benefit from or even initiate dialogue;
- The possibility of occasional meetings for both didactic and socialization purposes; and
- The participation in an industrialized form of education which, if accepted, contains the genus of radical separation of distance education from other forms.

The implications of introducing CMC in distance education are discus-

sed for each of these elements by Mason and Kaye (1990). They conclude that the use of CMC has three major implications for distance education:

- The breaking down of conceptual distinctions between distance education and place-based education;
- The changing of traditional roles of faculty, administrative and support staff, and adjunct tutors; and
- The provision of an opportunity, which never existed before, to create a network of scholars, "space" for collective thinking, and access to peers for socializing and serendipitous exchange.

These implications are so important that it is necessary to re-evaluate traditional distance education theories and discuss how they attune to CMC.

Distance Education Theories

Many theoretical perspectives on distance education have been presented during the last twenty years. Keegan (1988b) identifies these three theoretical positions:

- Theories of autonomy and independence,
- Theories of industrialization, and
- Theories of interaction and communication.

One representative theory in each position follows and the implication of the theory for computer conferencing is discussed.

Theories of autonomy and independence. Moore's inductive analysis of descriptions of two thousand instructional programs led to the development of a theory on dialogue, structure, and autonomy (Moore 1991). Moore perceives dialogue as interaction between learner and instructor, structure as certain characteristics of course design, and autonomy as learner independence. He argues that distance education organizations should ideally give students maximum independence with regard to choice of aims, objectives, study methods, and learning activities; study pace and progression; and evaluation (Moore 1983).

In a recent paper, Moore (1991) encourages analysis of the effects computer conferencing has on dialogue, structure, and autonomy. First, the introduction of group communication means that dialogue is no longer mere communication between learner and instructor. Second, few courses have been designed for computer conferencing; the majority have adapted their structure from existing distance education courses or face-to-face courses. Third, computer conferencing is devised for group activity, so too much autonomy is not within its scope. However, the goal must be to devise systems that support individual freedom as well as cooperative group activity.

Theories of industrialization. Peters's (1988) applications of industrial theory led him to conclude that the structure of distance teaching is determined to a considerable degree by the principles of industrialization, particularly by those of rationalization, division of labor, and mass production; the teaching process is gradually restructured through increasing mechanization and mass production. These changes account for the emergence of the following structural propositions:

- The development of distance study courses is just as important as the preparatory work taking place prior to the production process.

- The effectiveness of the teaching process is particularly dependent on planning and organization.
- Courses must be formalized and expectations from students standardized.
- The teaching process is largely objectified.
- The functions of academics teaching at a distance have changed considerably vis-a-vis university teachers in conventional teaching.
- Distance study can only be economical with a concentration of the available resources and a centralized administration. (Peters 1988,-110)

At first sight, the theory of industrialization does not seem to apply to computer conferencing. Bates (1991) states:

Third generation technologies (computer conferencing) are particularly valuable where relatively small numbers of students are concerned, since they avoid the high fixed production costs of the industrial model, but they do not however bring the economies of scale of the industrial model, unless the opportunities for interaction for an individual student are dramatically curtailed. (p. 13)

So far, we have very limited knowledge about how computer conferencing can be applied to mass education. We know, however, that computer conferencing systems can handle thousands of users. Hence, in a discussion of future electronic universities, this author describes how computer conferencing systems can be designed to support mass education (Paulsen 1992, 46).

Theories of interaction and communication. In his theory of guided didactic conversation, Holmberg (1988) views the distance-study course and its non-contiguous communication style as instruments of a "conversation-like interaction between the student on the one hand and the tutor counselor of the supporting organization administering the study on the other" (p. 115). Constant interaction (conversation) between the supporting organization (authors, tutors, counselors) is both simulated and real: simulated through the students' interaction with the pre-produced course materials and real through written and/or telephone interaction with their tutors and counselors.

Holmberg's theory is developed with a focus on correspondence courses and one-to-one communication. Consequently, it does not give much consideration to group communication. However, the theory can be developed further to include group facilitation, and a number of authors have recommended related facilitation techniques for computer conference courses.

To date, very little pre-produced course material is developed just for computer conferencing. Most of the material is adapted directly from existing face-to-face or correspondence courses. More work must be done in the future to produce tailor-made material for computer conferencing courses. An important feature of such material would be the potential for asynchronous group interaction. On the other hand, experience has shown that computer conferencing as currently implemented can be an excellent medium for facilitating a guided didactic conversation between the students, the tutors, and the supporting organization.

The Theory of Cooperative Freedom

The theory of cooperative freedom can be classified as a theory of autonomy and independence, as described earlier in this article. It is

influenced by Knowles's (1970) theory of andragogy, which asserts that adult learners perceive themselves as self-directing human beings and define themselves in terms of their personal achievements and experiences. The theory of cooperative freedom perceives both adult and juvenile distance learners as motivated, self-directing students with a desire to control their learning outcomes. Further, the theory applies to all three categories of Houle's (1961) student motivational orientations: goal oriented, activity oriented, and learning oriented.

McCreary (1990, 120) indicates how each of Houle's categories will relate to computer conferencing systems. Goal-oriented participants will perceive CMC as a way to "keep the edge" and to use state-of-the-art technology to achieve their goals. Activity-oriented students cannot resist the always-available online activity. Finally, knowledge-oriented people may be motivated by access to all the up-to-date information and knowledgeable people that CMC provides.

The theory of cooperative freedom suggests that, independent of motivational orientation, distance students need cooperation as well as freedom.

Cooperation. Houle (1984) states that education is a cooperative rather than an operative art: it implies voluntary interaction among individuals during learning. Even solitary students guiding their own programs without the help of an instructor seek help and encouragement from others. In a social setting, those who take part in an educational activity should have some sense of collaboration in both planning and implementation:

At one extreme, this sharing is so complete that it requires a group to decide everything that it does together. At the other extreme, the sharing may be implicit in the teaching-learning situation, as when many people flock to hear a lecturer. Those who attend vote with their feet, as the saying goes, and one cannot assume from their physical passivity and silence as they sit in the auditorium that they are not cooperating fully in their instruction. (Houle 1984, 45)

Cooperation can be hard to achieve in distance education. A major problem for many students is the loneliness that results from limited access to student peers; the urge for individual freedom may intensify the problem. However, new group communication technologies such as audio conferencing, video conferencing, and computer conferencing have been devised to facilitate cooperation at a distance.

Freedom. The theory of cooperative freedom is concerned with freedom from restraints rather than freedom from oppression. It professes that students should have a high level of freedom to choose rather than be restrained by a rigid distance education program. It states that freedom is crucial in distance education. For many people, the need for continuing education and lifelong learning is increasing. Today's students, however, often have full-time jobs and families to take care of and many are reluctant to participate if it means relinquishing high-quality family life and job achievements. They need flexible education: education that allows them to combine job, family, and education in a manageable way.

Freedom is a complex construct. It has many facets and features. The theory of cooperative freedom suggests that the facets of special importance to distance education are time, space, pace, medium, access, and curriculum. None of these can be described as dichotomous; each must be perceived as a continuum. This article describes important features of these six facets of freedom that program planners should consider when they develop distance education programs based on computer conferencing. The facets are presented and discussed as the Hexagon of Cooperative Freedom (Figure 1).

Cooperative freedom is a fabricated term. At first sight, it seems

self-contradictory. "Cooperative" indicates group interaction, though "freedom" implies individual autonomy. Yet, if we could develop a distance education system that combines freedom for the individual with group cooperation, we would attain a distance education system based on cooperative freedom. This article argues that such a system can be made possible by computer conferencing and discusses its potential strengths and weaknesses.

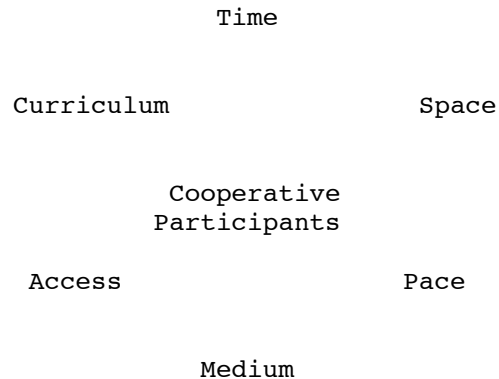


Figure 1. The Hexagon of Cooperative Freedom

Freedom of time. In distance education, one must distinguish between synchronous and asynchronous communication. In asynchronous communication, the message is stored in the communication medium until the receivers find it convenient to retrieve it. Synchronous communication, on the other hand, is inflexible, but allows people to communicate in real time, as they do face to face or on the telephone. Scheduling of synchronous communication varies in flexibility. A telephone conversation can be initiated without any prior schedule, but a videoconference must usually be scheduled months in advance.

A high level of freedom allows students to communicate whenever it is convenient for them. Students may prefer to study during the weekends, after their children have gone to bed, during regular work hours, or whenever they have time available. In addition, response time to a message should be minimal.

Computer conferencing is completely independent of time. Ideally it is available 24 hours a day, 365 days a year. It gives instantaneous access to information whenever it is convenient for the user and there is no need to synchronize the operation among communication partners. Many systems provide synchronous communication, as well.

Freedom of space. The first of Keegan's major elements for defining distance education dealt with the separation of teacher and learner. This separation does not necessarily imply much freedom of space. Many distance education programs, for instance those taught by videoconferencing, require students to attend classes at fixed locations. Further, Keegan concludes that distance education may include occasional face-to-face meetings.

Distance education programs with a high level of freedom let students choose where they want to study. Some may want to meet in a classroom with their peers while others prefer to study at home, at work, or wherever a busy life situates them.

Computer conferencing can be accessed worldwide, wherever there is a telephone. Long distance telephone charges, though a limiting factor, can to some extent be reduced by access to data networks.

Freedom of pace. Pacing implies meeting deadlines for starting a course, for examinations, and for assignments. Deadlines, however, can be flexible or rigid. They are flexible when students can set the deadlines,

or select one of several deadlines. One example of extreme pacing flexibility is seen in correspondence courses that allow students to start and finish at any time. A more moderately flexible example is a course with multiple starting dates that allow students to enroll at a convenient time. Shale (1987, 32) asserts that "...standardized treatments (of pacing) could be applied to all students on an individual basis." He also suggests possible justifications for rigid pacing:

- To make the administration of a distance-learning system tractable,
- To express a commitment to a collectivist philosophy,
- To guarantee the credibility of examinations,
- To enhance student motivation through group activity, and
- To avoid procrastination. (Shale 1987)

Based on a study of students who took the same course either by correspondence or by computer conferencing, Rekkedal concludes that "the correspondence students consider individual pace of study to constitute a large advantage of correspondence studies, while the EKKO (computer conferencing) students give more varied viewpoints" (Rekkedal 1990, 91).

A high level of freedom allows students to choose the pacing they prefer. If they resent rigid pacing, they should be allowed to spend the time they require to complete a course. Other people would like to choose when to start a course and how fast to progress in it.

Wells (1992) identifies three pacing techniques available with CMC. The first is group assignments that urge coherent pacing within groups. The second is gating, a technique that denies students access to information before they have completed all prerequisite assignments. The third technique is limited time access to services such as conferences, databases, and guest speakers.

The previous discussion shows that computer conferencing courses can be paced to a greater or lesser extent. Meaningful group communications, perhaps computer conferencing's major advantage, may, however, be hard to accomplish in an unpaced mode.

Freedom of medium. Nipper (1989) argues that there are three generations of distance education. The first generation uses correspondence teaching based on printed and written material. The second is based on broadcast media, such as television and radio, as well as on distribution of video- and audiocassettes. The third generation uses computer conferencing systems. Each generation utilizes the media devised in earlier generations.

Programs with a high level of freedom provide students with access to several media or sources of information: print, video, face-to-face meetings, computer conferencing, etc. This approach will support different learning styles and prevent exclusion of students lacking access to or knowledge of hightechnology media. Computer conferencing can easily and favorably be supplemented by or integrated with textbooks, audio and videoconferences, computer-aided instruction, etc.

Freedom of access. This point is related to the terms "open learning" and "open education." Charles A. Wedemeyer explains the origin of the term open learning:

This term came into use in 1969 when the British Open University was founded. It...means providing part-time learning opportunities for learners at a distance, who operate with a degree of autonomy and self-direction, but with open mediated access to learning without conventional prerequisites for acceptance or accreditation. (Wedemeyer 1981, xxvi)

Escotet (cited in Keegan 1986) characterizes open education as less restricted, exclusive, and privileged than traditional education; as

flexibly paced; as encouraging new relationships between professors and students; and as willing to accredit the value of students' life experiences.

Programs that aspire to a high level of freedom must eliminate discrimination on the basis of social class, entry qualifications, gender, age, ethnicity, or occupation. Programs should not ask students to document prior education; rather, students should decide for themselves whether they are capable of pursuing the course of study. Access should be available to students with limited monetary resources, and to those with no access to or limited knowledge of distance education technology. A major concern for computer conferencing is its image as an exclusive medium closed to prospective students lacking access to necessary equipment or knowledge about how to use it. Fortunately, this problem is alleviated year by year as more people learn to use computers at home, school, or work.

Freedom of curriculum. This facet reflects the theories of autonomy and independence discussed earlier in this article. One noticeable example of such freedom is provided by the Electronic University Network, which promotes transfer of credits among all its member colleges.

A high level of freedom allows students to choose among a range of courses and to transfer credits between programs and universities. It further implies opportunities for individual studies, learning contracts, internships, etc.

Computer conferencing has the potential to enhance inter-college collaboration. Several programs, perhaps from different colleges, could favorably be offered through one computer conferencing system. It is to be hoped that such multi-program computer conferencing systems will provide additional course options and transfer of credits.

Discussion

Freedom is a multi-dimensional construct. Each dimension should be regarded as continuous rather than dichotomous, as relative, not absolute. All distance education programs will have some freedom in each dimension. There are no quick, definite, or ready-made answers to the question of how much freedom a distance education program should provide. Nevertheless, program planners who address this question are likely to provide better distance education.

A high level of student freedom, assumed in this article to be a desirable goal of course design, is extremely difficult to achieve. Scarce resources and rigid educational regulations often inhibit flexible distance education. Yet, the hexagon of cooperative freedom can serve as a guide for implementation of distance education.

One may say that one person's freedom ends where another's begins, that one person's freedom to act infringes on the freedom of another. As Burge (1991) points out in relation to computer conferencing, "One person's time flexibility is another's time delay." The truth of this statement is hard to refute, but such negative consequences could be mitigated by reducing dependence on individual students and instructors. Coteaching, for instance, could reduce the response time since several teachers can access the system more often than one teacher can.

Individual freedom is hard to combine with an industrialized model of education and can hardly compete in terms of cost effectiveness with industrialized mass education. There is a trend, however, toward customized mass production. A buyer of a new car today may choose among several accessory options. Why, then, should not modern mass education aim for individual flexibility?

Conclusion

Future adult students will seek individual flexibility and freedom. At

the same time, they need group collaboration and social unity. Computer conferencing, when integrated with other media, can be the means of joining freedom and unity into truly flexible, cooperative distance education programs.

References

- Bates, T. 1991. Third generation distance education: The challenge of new technology. *Research in Distance Education* 3(2):10-15.
- Burge, E. J. 1991. Appreciation and description: Themes for germinal research. A paper presented at The Second American Symposium on Research in Distance Education, May 22-24, The Pennsylvania State University, University Park, PA.
- Holmberg, B. 1988. Guided didactic conversation in distance education. In *Distance Education: International Perspectives*, eds. D. Sewart, D. Keegan, and B. Holmberg, 114-22. London/New York: Croom Helm/St. Martins Press.
- Houle, C. O. 1961. *The Inquiring Mind* Madison, WI: University of Wisconsin Press.
- Houle, C. O. 1984. The design of education. In *Selected Writings on Philosophy and Adult Education*, ed. S. B. Merriam, 41-50. Malibar, Florida: Krieger.
- Keegan, D. 1986. *The Foundations of Distance Education*. London: Croom Helm.
- Keegan, D. 1988a. Theories of distance education. In *Distance Education: International Perspectives*, eds. D. Sewart, D. Keegan, and B. Holmberg, 63-67. London: Routledge.
- Keegan, D. 1988b. On defining distance education. In *Distance Education: International Perspectives*, eds. D. Sewart, D. Keegan, and B. Holmberg, 6-33. London: Routledge.
- Knowles, M. 1970. *The Modern Practice of Adult Education*. New York: Association Press.
- McCreary, E. K 1990. Three behavioral models for computer-mediated communication. In *Online Education: Perspectives on a New Environment*, ed. L. Harasim, 117-30. New York: Praeger.
- Mason, R. and T. Kaye. 1990. Toward a new paradigm for distance education. In *Online Education: Perspectives on a New Environment*, ed. L. Harasim, 15-38. New York: Praeger.
- Moore, M. G. 1983. On a theory of independent study. In *Distance Education: International Perspectives*, eds. D. Sewart, D. Keegan, and B. Holmberg. London/New York: Croom Helm/St. Martin's Press.
- Moore, M. G. 1991. Theory of distance education. Paper presented at The Second American Symposium on Research in Distance Education, May 22-24, The Pennsylvania State University, University Park, PA.
- Nipper, S. 1989. Third generation distance learning and computer conferencing. In *Mindweave: Communication, Computers and Distance Education*, eds. R. Mason and A. Kaye, 63-73. Oxford: Pergamon Press.

- Paulsen, M. F. 1992. From Bulletin Boards to Electronic Universities: Distance Education, Computer-Mediated Communication, and Online Education. University Park: The American Center for the Study of Distance Education.
- Paulsen, M. F. 1992. The electronic university: computer conferencing in mass education. In From Bulletin Boards to Electronic Universities: Distance Education, Computer-Mediated Communication, and Online Education, M. F. Paulsen, 46-55. University Park: The American Center for the Study of Distance Education.
- Peters, O. 1988. Distance teaching and industrial production: A comparative interpretation in outline. In Distance Education: International Perspectives, eds. D. Sewart, D. Keegan, and B. Holmberg, 95-111. London/New York: Croom Helm/St. Martin's Press.
- Rekkedal, T. 1990. Recruitment and study barriers in the electronic college. In The Electronic College. Selected Articles From the EKKO Project, eds. M. F. Paulsen and T. Rekkedal, 79-105. Oslo: NKI Forlaget.
- Shale, D. G. 1987. Pacing in distance education. The American Journal of Distance Education 1(2):21-33.
- Wedemeyer, C. A. 1981. Learning at the Back Door. Wisconsin: The University of Wisconsin Press.
- Wells, R. 1992. Computer-Mediated Communication for Distance Education: An International Review of Design, Teaching, and Institutional Issues. University Park: The American Center for the Study of Distance Education.
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