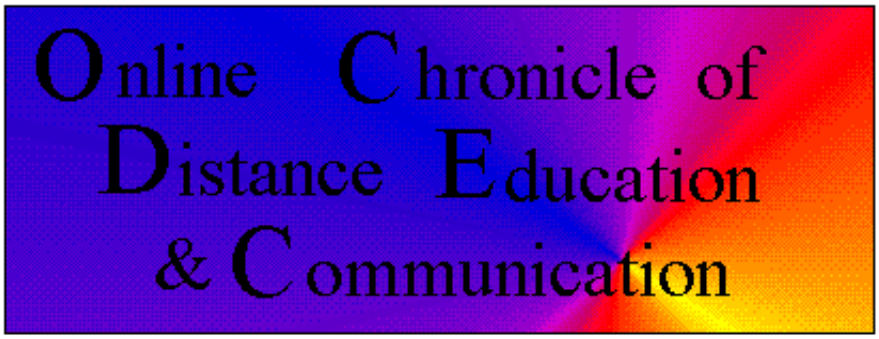

Volume #1, Issue #3

Date: April 1988

Editor:
Jason Ohler, Director
Educational Technology Program
University of Alaska Southeast

ONLINE JOURNAL OF DISTANCE EDUCATION AND COMMUNICATION

In the industrial age, we go to school. In the information age, school can come to us. This is the message implicit in the media and movement of distance education.

Volume #1, Issue #3

Date: April 1988

Editor: Jason Ohler

Educational Technology Program Director
University of Alaska Southeast
11120 Glacier Highway, Juneau, Alaska 99801
907-789-4417
BITNET USERID: JFJBO@ALASKA

Technical Coordinator: Paul J. Coffin

Box 34166
Juneau, Alaska 99803 907-780-6211
BITNET USERID: JXPJC@ALASKA

WELCOME TO THE ONLINE JOURNAL OF DISTANCE EDUCATION AND COMMUNICATION

This issue at a glance:

1. ELECTRONIC MAIL AND EDUCATION IN AUSTRALIA by
PETER B. WHITE, Chairman,Centre for the Study of Educational Communications and Media, La Trobe University, Bundoora, Vic 3083, Australia

BITNET: edupw@latvax8.lat.oz

2. INTELENET SERVES INDIANA AS A ROLE MODEL FOR THE NATION, by
Thomas I. M. Ho, Ph.D., Executive Director, INTELENET
Commission, 1 North Capitol, suite 310, Indianapolis,
Indiana 46204-2226 Phone: 317+232-4978

BITNET: IYWS100@INDYCMS

3. THE OERI TOLL-FREE BULLETIN BOARD SYSTEM, Thomas I. Litkowski,
U.S. Department of Education, Office of Educational Research
and Improvement, Information Systems and Media Services,
555 New Jersey Avenue NW, Washington, DC 20208-1327

4. CENTER ON EDUCATION TECHNOLOGY Grant Funding Available,
Ms. Delores Monroe, Office of Research, 555 New Jersey Ave. NW,
Washington,DC 20208-1430. Telephone (202) 357-6223

5. MICROCOMPUTER TELECOMMUNICATIONS FOR EDUCATORS, by
Frank and Regina Odasz at Western Montana College's Big Sky
Telegraph BBS, Western Montana State College, Box 11,
Dillon, MT 59725

Modem: Big Sky Telegraph BBS 406-683-7680 (3/12/2400 baud, 24 hrs)
Voice: 406-683-7338 (11A-12Noon weekdays, Frank and Regina Odasz
Big Sky Telegraph BBS Coordinators)

6. AN INTERACTIVE DIGITAL GRAPHICS NETWORK IN NORTHERN ALASKA,
by Greg Moore, General Science Instructor, Chukchi College,
University of Alaska Fairbanks, Box 297,
Kotzebue, Alaska 99752 Phone: 907-442-3400

BITNET: ZFGDM@ALASKA

7. SEEKING INFORMATION ABOUT THE USE OF EDUCATION TECHNOLOGY IN
VOCATIONAL EDUCATION, from Joanne Harack

BITNET: CATE8805@RYERSON

8. DISTANCE EDitorial:
LET'S BRING BITNET TO THE SOVIET UNION
By Jason Ohler

9. APPENDIX: ABOUT THE ONLINE JOURNAL OF DISTANCE
EDUCATION AND COMMUNICATION

THIS ISSUE'S CONTRIBUTIONS

ITEM #1

ELECTRONIC MAIL AND EDUCATION IN AUSTRALIA

PETER B. WHITE

Chairman,
Centre for the Study of Educational
Communications and Media,
La Trobe University,
Bundoora, Vic 3083
Australia.

BITNET: edupw@latvax8.lat.oz

BACKGROUND

The bulk of Australia's population is concentrated in a geographic corridor which links Sydney, Melbourne and Canberra. The rest of the population is spread unevenly across a vast and often inhospitable continent where land and air transportation is often time-consuming and expensive. These demographic and geographic realities create major problems for those charged with the delivery of social services. (Ingenious responses to these realities in the past have included the Flying Doctor Service and the School of the Air and these have been well documented.) But in the last three years Australian educators have been experimenting with the educational uses of electronic mail as a technique which can conquer the "tyranny of distance".

The major providers of commercial electronic mail services in Australia are the Government-owned national and international carriers, Telecom Australia and the Overseas Telecommunications Commission (OTC). Telecom offered a service based on GTE Telemail software and OTC offered a Dialcom-based service. Both services are now offered by a joint-venture company called Keylink.

PROJECTS:

Most Australian educational services use the Telemail service, Keylink T and the structure of the applications mirrors the structure of the Australian educational system. Applications include: Queensland Department of Education: The Rural Secondary Schools Support Scheme provides materials and other support for teachers and students in small rural schools. The electronic mail service links the rural residents to teachers in Brisbane, the State capital. Other projects include a national school-based research project called Weather Watch. Teachers are also using the service for professional development and participation in professional associations.

The Victorian and New South Wales department's of education have used the system as a means of supporting its Computer Education projects through the distribution of curriculum materials and technical support. Students have also used the system for the exchange of classroom generated projects. The New South Wales Department of Education Correspondence School has also used the system to provide support for students in remote and isolated areas.

A tertiary oriented network has developed around the use of technology in open learning and distance education. The Australian Open Learning Information Network (AOLIN). Members come from universities, colleges and institutions in Australia and overseas. Apart from providing a focus for debate and research in the area it operates special interest bulletin boards and has pioneered the Australian use of computer

conferencing. AOLIN also provides mailboxes and user support for institutions wishing to use electronic mail to support their off-campus

students. The major Keylink D user is the Computer Pals Around the World project. It has developed an extensive network of primary and secondary schools. Students exchange creative and other work as a part of structured curriculum packages.

THE FUTURE:

Educational uses of electronic mail outside of the tertiary and research networks is just taking off in Australia. The sound basis for growth has developed because educational planners and Telecom Australia and OTC have tried to ensure that the electronic mail applications are significant and non-trivial uses of resources. Evaluation has been encouraged and the next generation of applications will reflect what has been learned so far.

NOTE: The author is a consultant to Telecom Australia on the educational applications of Value Added Services.

ITEM #2

INTELENET SERVES INDIANA AS A ROLE MODEL FOR THE NATION

Thomas I. M. Ho, Ph.D.

Executive Director
INTELENET Commission
1 North Capitol, suite 310
Indianapolis, Indiana 46204-2226

ABSTRACT

INTELENET (INdiana TELEcommunications NETwork) is a unified inter-city communications system serving Indiana by providing:

- a voice and data network serving higher education and state government
- a broadcast video network linking higher education, industry, and hospitals

INTELENET is a fiber optic backbone network that serves 16 concentration sites where customers will access its services. The major portion of the backbone will be constructed and owned by GTE Telecom Inc. of Stamford, Connecticut and Colorado Springs, Colorado. The remainder of the backbone will be leased.

By initially providing video services for the Indiana Higher Education Telecommunication System, inter-city voice services for Indiana state government, and inter-city data services for Indiana University, INTELENET is expected to save Indiana taxpayers over $34 million over the next ten years. Furthermore, INTELENET provides the foundation to serve other customers such as primary and secondary education, libraries, and city and county governments. Potential future services include electronic document delivery and two-way video.

INTRODUCTION

This paper will answer the following questions:

1. Why is Indiana creating INTELENET?
2. What is INTELENET?
3. How will INTELENET serve Indiana?
4. Why is INTELENET a role model for the nation?

WHY IS INDIANA CREATING INTELENET?

INTELENET is motivated by:

1. Communications industry changes
2. Technology
3. Shortcomings in Indiana's communications infrastructure.

Communications industry changes

Deregulation and new services are the major changes in the communications industry that motivated INTELENET. Deregulation of the industry has created a competitive climate that is compelling service providers to re-examine their pricing strategy. New services such as packet switching and other value-added networks have created the prospect of considerably enhanced communications that require the foundation of a disciplined and robust network.

Technology

Technological progress in areas such as transmission and hardware has significantly improved the price-performance of network components. For example, emerging transmission media such as fiber optics possess both the capacity and other performance characteristics to substantially improve both the volume and the quality of transmission. Hardware innovations such as very-large-scale-integration significantly improve the economics of digital switching, multiplexing, and other communications functions.

Shortcomings in Indiana's communications infrastructure

Shortcomings in Indiana's communications infrastructure include:

1. Rising communications costs
2. Lack of state-wide direction
3. Communications capacity constraints.

In 1985, telecommunications spending by both Indiana state government and the major Indiana state-supported higher education institutions totaled 25 million dollars.1 Of that total, $5.5 million were spent on private line circuits and $6.3 million were spent on voice long distance circuits. In both sectors, costs have been rising rapidly. For example, inter-campus voice services provided by the Indiana Higher Education Telecommunication System (IHETS), a consortium of Indiana public and private universities and colleges, now consume a much larger proportion of its budget. As a result, IHETS has been forced to cut in half the number of microwave channels it leases to transmit its video. As a matter of fact, voice services currently cost more than video

services.2

Historically, IHETS and Indiana state government have collaborated in only a limited manner while fulfilling their respective communications needs. For example, IHETS operates the State University VOice Network (SUVON) utilizing leased phone lines. Independently, state government operates the Capitol Complex Phone System, a Centrex-based service utilizing foreign exchange and WATS services to connect the state capital with locations throughout Indiana. Within state government, a variety of heterogeneous data networks, e.g. Bureau of Motor Vehicles, Employment and Training, and Welfare, have evolved.

Simultaneously, IHETS leases a microwave network to distribute its video to Instructional Television Fixed Service (ITFS) transmitters throughout the state. This video network no longer has the capacity to increase its programming.

Communications capacity constraints

All of these networks use analog technology. For example, both the IHETS video and voice networks as well as state government's voice network are analog.

The IHETS video network is severely limited. Its geographical coverage is limited so that it cannot be received in every Indiana county. Its programming schedule is extremely crowded.

WHAT IS INTELENET?

The INTELENET concept

INTELENET is the consolidation of virtually all of the communications requirements of Indiana state government and education. This consolidation creates a critical mass, especially with the IHETS video, that generates economies of scale. This consolidation creates bargaining power that can be leveraged to win cost-cutting concessions from vendors.

INTELENET is also an integrated voice and data network. It uses digital switching as well as a digital transmission backbone that efficiently manages voice and data traffic.

INTELENET is also a distinct video network that uses a separate digital video switch as well as a separate digital transmission backbone.

INTELENET benefits

INTELENET will provide cost-effective access with stable prices. The INTELENET contract obligates the INTELENET contractor to a fixed rate for all line costs for the life (at least 5 and up to 10 years) of the contract. Conservatively, it is estimated that Indiana will save over 34 million dollars during a 10-year contract term.

INTELENET lowers the entry barriers, in terms of both technology and price, for its customers. The INTELENET contractor will provide central network management. In addition to lowering the cost of services, the contract also guarantees the capability to expand the network dramatically at predetermined costs.

INTELENET highlights communications to help Indiana government and educational agencies to realize the strategic role of communications in serving constituents and in delivering services.

INTELENET features

INTELENET is an inter-city backbone network with 16 to 34 concentration points. The backbone consisting of fiber optic transmission, multiplexing, and switching facilities falls under the INTELENET protective umbrella. Terminal equipment as well as local access to a concentration point are the responsibility of its customers, e.g. IHETS and state government.

INTELENET's technical design is illustrated in Figure 1.

INTELENET services include voice communications, data communications, and broadcast video. The telephone network is a statewide voice network serving higher education (SUVON) and state government. Data communications include private line circuits, wideband digital transmission service, and switched data circuits. The broadcast video network transmits IHETS video programming from IHETS members' studios to IHETS' ITFS transmitters.

For customer support, INTELENET provides centralized network management and a central user help desk.

What INTELENET is not

INTELENET does not provide local phone service; it is an inter-city backbone. Local access to INTELENET concentration points will be provided by local telephone operating companies.

INTELENET is leased, not owned, by the INTELENET Commission. INTELENET is owned by GTE Telecom. Indiana state government has not appropriated any funds to construct INTELENET. The State of Indiana has no risk from technological obsolescence.

INTELENET does not replace the Indiana Higher Education Telecommunication System (IHETS). As a consortium of educational institutions, IHETS can hold ITFS licenses granted by the Federal Communications Commission. The INTELENET Commission is not an educational institution.

By Indiana statute, the following are excluded from the scope of INTELENET:

1. Private sector use other than access to:

    a. Educational video
    b. State and education data networks
    c. Constituent-to-government communications

2. Resale of excess capacity to the private sector.

INTELENET customers

During INTELENET's first year of operation in 1988, its customers will be:

1. Indiana Higher Education Telecommunication System (IHETS)
    a. Broadcast video
    b. State University VOice Network (SUVON)
2. Indiana state government
    a. Voice service to INTELENET concentration points
    b. Data communications
3. Indiana University
    a. Academic computing network
    b. Administrative computing network

Future customers authorized by the INTELENET statute include:

1. Primary and secondary education
2. Vocational education
3. State-supported community programs
4. State, city, and county libraries
5. City and county government agencies.

INTELENET roles

The INTELENET Commission was created by Indiana statute IC 5-21. Distinct from Indiana state government, the Commission is a body corporate and politic with the following responsibilities:

1. Fiscal and administrative services including:
    a. Budgeting
    b. Contract administration
    c. End-user billing
2. Telecommunications management
    a. Telecommunications planning
    b. User group interaction
3. Communications consulting services.

The Commission is composed of representatives of its customers, e.g. universities and state government, appointed by the Governor as well as selected members of state government including Indiana's General Assembly. The Executive Director appointed by the Governor is the Commission's chief administrative officer.

The Commission is a self-supporting organization that collects user fees to fund its lease payments to the INTELENET contractor and the Commission's operating costs.

The INTELENET contractor, GTE Telecom, is responsible for operating and maintaining INTELENET.

The contractor's responsibilities include:

1. Provide backbone facilities
2. Provide network equipment, e.g. switches and multiplexers
3. Coordinate user premise connections
4. Test and manage network
5. Maintain network
6. Generate billing

The INTELENET customer, e.g. state government or university, must justify to itself any allocation of its funds to lease INTELENET services. Furthermore, since INTELENET currently offers no value-added services, the customer must also develop and manage any application that the customer installs on the network.

HOW WILL INTELENET SERVE INDIANA?

Initially, INTELENET will provide the following services with improved performance at lower cost:

1. Telephone network for Indiana higher education (SUVON) and state government
2. Video transmission service for Indiana higher education (IHETS) teaching Indiana business, health care, and other audiences
3. Private line circuits for Indiana University's academic and administrative computing networks.

INTELENET has the potential to do much more! For example, its data communication services could enable:

1. Document exchange among Indiana's libraries
2. Shared access to Indiana government and educational databases
3. Collaboration among pre-collegiate, collegiate, and corporate educators.

Video services could be upgraded to two-way, rather than one-way broadcast, capability to enable videoconferencing among government and educational personnel to reduce travel costs. Even geographical coverage could be expanded by providing gateways to national and international networks!

WHY IS INTELENET A ROLE MODEL FOR THE NATION?

At this time, INTELENET is still unfortunately unique! What makes INTELENET unique?

INTELENET is comprehensive! INTELENET serves an entire state. While other states have state-wide networks, no other state-wide network offers the wide range of services offered by INTELENET:

1. Broadcast video at DS-3 (45 Mbps) rates

2. Data services at a wide range (from 1200 bps to 1.544 Mbps) of rates
3. Voice service.

Other public service networks that may offer similarly broad services do not cover an entire state.

The INTELENET Commission is special! The Commission represents a coalition of state government and education that works in Indiana. IHETS creates the critical mass of communication bandwidth demand that generates the economies of scale to be enjoyed by all of Indiana government and education. State government has created the Commission to capitalize on this opportunity!

Please contact the Commission about similar opportunities:

Phone: 317-232-4978
Bitnet: IYWS100 at INDYCMS
CompuServe: 73240, 2415
Source: BFH599

REFERENCES

1. INTELENET Feasibility Assessment Report. Available for cost of reproduction from the INTELENET Commission (address above)

2. IHETS Report for 1985-86. Available from:

   Indiana Higher Education Telecommunication System
   957 West Michigan Street
   Indianapolis, IN 46223
   317/263-8900

Acknowledge-To: Thomas I. M. Ho

ITEM #3

THE OFFICE OF EDUCTIONAL RESEARCH AND IMPROVEMENT TOLL-FREE BULLETIn BOARD SYSTEM

U.S. Department of Education
Office of Educational Research and Improvement
Information Services
February 1988

Dataline: 800-222-4922 (toll free: 3/12/2400 baud, 24 hrs)
D.C. area only: 202-626-9853 (dataline)
Voice: 202-357-6524

ALL READERS PLEASE NOTE

Send WRITTEN Comments ONLY to:
Thomas I. Litkowski,
U.S. Department of Education
Office of Educational Research and Improvement
Information Systems and Media Services
555 New Jersey Avenue NW
Washington, DC 20208-1327

The purpose of this notice is to discuss the OERI Toll-Free Bulletin Board System and to solicit comments from users on proposed changes.

BACKGROUND

The Office of Educational Research and Improvement (OERI) has been operating the Toll-Free Bulletin Board System since December 1985. The main purpose of this system is disseminate OERI statistical and research results to the educational community.

CURRENT STATUS

In January 1987, approximately 150 calls per month were registered on the Bulletin Board System; in January 1988 monthly calls exceeded 3,000. Because only two callers can access the Bulletin Board System simultaneously, users are increasingly faced with busy signals when attempting to contact the system. In addition, uploads of educational software programs have required an increasing amount of computer storage capacity which will soon be depleted. The system currently contains approximately 500 OERI statistical and research files and 500 public domain education software programs that have been uploaded by users.

SOLUTIONS AND NEED FOR YOUR COMMENTS

There are a number of options to improve the system currently under review. These options range from reducing and/or eliminating selected features of the Bulletin Board System, to expanding the system to allow more simultaneous users. In order to make an informed decision, we need your comments and observations. We need to know from you, the users of the OERI Toll-Free Bulletin Board System, how you use the system to accomplish your mission in the education field; that is, which feature or features of the Bulletin Board System are most useful to you and why.

We would like to have your comments as soon as possible. Given the current limitations of the Bulletin Board System, it will be necessary to make changes to the system in the near future. Once again, if you would like to comment on our system, please send your WRITTEN comments to

Patt Haring
{sun!hoptoad,cmcl2!phri}!dasys1!patth
Big Electric Cat Public Access Unix (212) 879-9031 - System Operator

Three aspects of wisdom: intelligence, justice & kindness.

ITEM #4

CENTER ON EDUCATION TECHNOLOGY
Grant Funding Available

OFFICE OF RESEARCH
OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT
U.S. DEPARTMENT OF EDUCATION
WASHINGTON,D.C. 20202

The Office of Research announces grant competitions for fiscal year 1988 and solicits applications for the following:

FIELD-INITIATED STUDIES

Type of award: Research grants designed to advance educational theory and practice. Topics selected by applicants.

Eligibility: Institutions of higher education. Public and private organizations, institutions, and agencies. Individuals.

Restrictions: Project period up to 18 months.

Funding amounts: $500,000 available for approximately 10 awards. Average award around $50,000.

Application due date: May 13,1988

Contact and information: Ms. Delores Monroe, Office of Research, 555 New Jersey Ave.,NW, Washington,DC 20208-1430. Telephone number (202) 357-6223.

CENTER ON EDUCATION TECHNOLOGY

Type of award: Grant to establish a new research and development center to study technology in education, as it affects learning, teaching, evaluation and indicator measures, and organization and management of schools.

Eligibility: Institutions of higher education, institutions of higher education in consort with public agencies or private nonprofit organizations or interstate agencies established by compact that operate subsidiary bodies established to conduct postsecondary educational research and development.

Restrictions: Award up to 5 years.

Funding amounts: $900,000.

Application due date: June 10,1988.

Contact and information:

Dr. Anne E. Sweet, Office of Research
555 New Jersey Ave.,NW
Washington, DC 20208- 1430
Telephone number (202) 357-6043
There will be a briefing session on April 15, 1988 from 9:30 to 11:30Am in Rm. 326, 555 New Jersey Ave., NW, Washington,DC, 20208.

Note: There are also CENTER ON EDUCATION LEADERSHIP awards available.

Contact and information:
Dr. Robert Slater, Office of Research
Rm. 627E, 555 New Jersey Ave.,NW
Washington, DC 20208-1430
Telephone number (202)357-6218
There will be a briefing session on April 15, 1988 from 2:00 to 4:00PM, Rm 326, 555 New Jersey Ave.,NW, Washington,DC, 20208.

Patt Haring
{sun!hoptoad,cmcl2!phri}!dasys1!patth
Big Electric Cat Public Access Unix (212) 879-9031 - System Operator

Three aspects of wisdom: intelligence, justice & kindness.

ITEM #5

MICROCOMPUTER TELECOMMUNICATIONS FOR EDUCATORS- The Syllabus
by Frank and Regina Odasz

[Note: Frank and Regina Odasz at Western Montana College's Big Sky Telegraph BBS have just completed their first "online" Microcomputer Telecommunications for Educators course. Their dream is to network the 100+ one room schools in rural Montana through the Big Sky Telegraph BBS (soon to be a node on UseNET); following is the Syllabus, Lessons 1-5 and a file called Infonauts which lists the teachers registered; they telecommuted to online classes using Apple][computers and Promethus modems linking them to the IBM AT running SCO Xenix and FoxBase+ with xbbs (customized by Dave Hughes) at Western Montana State College. The syllabus is uploaded here with the authors'permission.]

SYLLABUS

Western Montana State College
Box 11
Dillon, MT 59725

modem: Big Sky Telegraph BBS 406-683-7680 (3/12/2400 baud, 24 hrs)

voice: 406-683-7338 (11A-12Noon weekdays, Frank and Regina Odasz Big Sky Telegraph BBS Coordinators)

SYLLABUS

COURSE TITLE: MICROCOMPUTER TELECOMMUNICATIONS FOR EDUCATORS

NO. CREDITS: one semester credit at 491 level

COURSE OBJECTIVES:

> To demystify the telecommunications uses of microcomputers as they relate to K-12 education and to provide needed rural community services through better communications with resource persons, Western Montana College, various service agencies and other online services. To establish student confidence in microcomputer telecommunications to allow continued professional uses for peer networking, resource sharing, and K-12 student/classroom use.

INSTRUCTOR(S): Frank and/or Regina Odasz

PREREQUISITES FOR ENROLLMENT: teacher certification required, keyboarding, wordprocessing skills and some computer experience recommended.

COURSE OUTLINE:

I. microcomputer basics

   a. managing technofear
   b. dos, file handling and magnetic media
   c. the potential of microcomputers for rural education

II. wordprocessing basics

   a. creating, saving and using text files
   b. the advantages of wordprocessing

III. a review of available communications mediums

   a. textual organization of information vs visual and auditory medias
   b. nested menus vs command driven systems
   c. advantages of microcomputer telecommunications
   d. bulletin board systems (bbs's)
   e. advantages of non-real time communications

IV. electronic bulletin board basics

   a. making a basic online call
   b. saving a call as a text file for later review
   c. sending a preprepared text file
   d. individual and group messaging

      1. peer networking and the rural teacher
      2. teleconferencing

e. bulletins, newsletter and updates

V. rural teachers as community resource linkers

a. available community services and needs
b. rural Montana, the information age and job training
c. online courses for K-12, adult literacy, inservice, other
d. software loan library

1. resource circulation advantages

e. WMC ERIC system and library telecommunications services

VI. community economic development

a. . local bulletin board systems
b. online access to new opportunities

VII. online databases

a. keyword boolean searching
b. agricultural databases
c. BRS, Dialog and database suppliers

COURSE REQUIREMENTS:

Course will consist of a minimum of three hours per week over five weeks, one hour reading and/or doing offline assignments such as preparing text files for later communication, lesson plans, and teleconferencing activities, one hour online seeking and exchanging information and resources, and one hour working with students or community members providing services or giving demonstrations.

COURSE TEXT:

No formal textbook will be used. Extensive readings will be done through lessons which involve information and resource access through online systems. Software programs will be extensively used.

GRADING (evaluation criteria):

Completion of all assignments with a grade average of 70% including thrice weekly online calls and associated printouts.

LOCATION OF COURSE: nearest microcomputer to student's location (this is a distance learning medium).

DAYS & TIMES: Class meets online at learner's convenience a minimum of three times a week for roughly 20 minutes per call.

ITEM #6

AN INTERACTIVE DIGITAL GRAPHICS NETWORK IN NORTHERN ALASKA

Greg Moore
General Science Instructor
Chukchi College
University of Alaska Fairbanks
Box 297
Kotzebue, Alaska 99752

(907)442-3400
ZFGDM@ALASKA

Chukchi College has been using an interactive digital graphics network to teach remotely located village students. Centered in Kotzebue, the network extends outward over satellite-based long distance telephone circuits to 9 outlying villages. Students in the "Electronic Chalkboard" classes can participate by both voice and computer graphics. Pictures drawn or typed on one computer screen can be seen by all other participating sites, and any site can respond in kind.

What is Interactive Digital Graphics?

"Interactive digital graphics" is the exchange of graphics between computers connected by modems. The "interactive" feature allows the users to modify the graphics with a light pen or other input device; for example, change the net step in an algebraic equation, or point to some feature of a circuit diagram on-screen. Interactive digital graphics (IDG) allows people to communicate over a graphic image.

The IDG network at Chukchi is star-shaped, with a audio bridge in Kotzebue at the center. Each outlying site in the network currently requires two phone circuits - one for the audio signal and one for the data signal from the computers. At the bridge, the audio circuits are connected together into a standard audioconference. At a second, separate bank on the bridge all of the data circuits are connected together into a "data" conference so that the computers may "speak" to each other. Only one person may speak at a time in the audioconference network, and only one computer may "speak" at a time in the data network; this "half-duplex" feature allows the use of less expensive bridge technology, making the system affordable for rural schools. On the computer side of the network, the software manages the flow of information, eliminating the need for an expensive polling device.

Why Interactive Digital Graphics?

In northwest Alaska, Inupiat Eskimo students have had difficulty making a successful transition to college-level work, particularly in mathematics and science. The Chukchi staff felt that classes in math and science should be available to the students in their villages. Students would have an opportunity to develop math and science skills without the complicating, acculturative factors of moving to a residential campus. The problem was how to effectively distance-deliver math and science? The two subject areas require a strong visual component to teach effectively.

How well does it work?

By building effective classes over an IDG network base, Chukchi College has been able to turn student failure in mathematics into student success. Prior to the IDG network, about 70% of students attempting mathematics classes did not succeed; after two year of using the network, the dropout rate has decreased to 30%. These results must be used cautiously. The sample size at Chukchi College is small, and adjustments in delivery include many more factors than just the hardware base, including strong cross-cultural adjustments in pedagogy. Nevertheless, the college staff believes that the Electronic Chalkboard system has provided a communication opportunity which did not exist before.

The Future for IDG in Alaska....

There are over 200 rural schools in Alaska, most in non-road-connected villages. The village schools are small and have difficulty providing a full range of courses to their students. The majority of Alaska Native students are educated in those small schools. Equal access to education is a significant social problem in Alaska.

The staff at Chukchi College believes that, with continued development, interactive digital graphics technology could help to provide better learning resources for Alaska Native students. By continuing to improve the technology with a firm eye toward human need, IDG networks may prove to be a significant teaching tool in the near future for Alaska schools.

ITEM #7

SEEKING INFORMATION ABOUT THE USE OF EDUCATION TECHNOLOGY IN VOCATIONAL EDUCATION

From: Joanne Harack, BITNET: CATE8805@RYERSON

For a paper reviewing the current uses of educational technology for VOCA TIONAL TRAINING in Canada and the United States, I am seeking information on the following topics:

1. the technologies being used (capabilities, costs, advantages)
2. reasons for use (quality, efficiency, other)
3. kinds of learning tasks (cognitive, affective, psychomotor)
4. measurable successes;
5. costs
6. nature of reduced costs, if any (eg savings on travel)
7. software considerations, especially any experiences with cross-cultural adaptation
8. lifetime of software for vocational and technical training
9. framework of institutional support (eg role of instructors)
10. institutional,financial or technical barriers that have prevented the technologies from being integrated into standard training delivery.

I am concerned with both college/university experiences and private sector examples. Any advice, references, case studies or other information would be greatly appreciated.

ITEM #8

DISTANCE EDitorial:
LET'S BRING BITNET TO THE SOVIET UNION

By Jason Ohler, Editor, Online Journal

Distance communication can be roughly defined as communication in which the sender is in one place and the receiver is in another, separated temporally, spatially or both. The gap in time and space is bridged by technology which we use to project three of our senses: sight (through data, graphics, video), sound (through audio), and touch in a limited sense (through the mail system).

Yet, touch was the first sense to be projected at a distance in an organized, state-supported sense not through the mail system but via ballistics. Ballistics is a crude form of touching, essentially the extension of a coiled fist sent raging through the air. It is a medium which has only one message: I hate you. Ballistics is different than the bow and arrow and the spear in that enough distance is introduced between sender and receiver that both parties become faceless entities. Unfortunately it has been the only real distance communication medium between some parts of the world, particularly the east and west as represented by the Soviet Union and the United States. Until recently.

The real problem with a ballistics communication system, in addition to its obvious destructive tendencies, is its inability to carry detail. For decades the US and USSR, and their allies, have been living the life of the morality play, where good and evil come to blows in a world of black and white, against a background of pure ignorance.

Communications technology counteracts such ignorance. With the addition of mail, audio, and video, embedded in the context of glasnost, citizens of the US and USSR have the potential of experiencing new, more detailed and varied kinds of communication. Nameless entities become authors via electronic mail memos, conversationalists via phone and television. Enemies get fleshed out, take form, and become human enough to invite curiosity, cooperation, as well as disagreement; anything but enmity.

Fortunately with BITNET we are in the position of being able to do more than just talk about changing the world. I have experienced the power of BITNET at work. I have helped teachers establish networks with students half way around the world. This Journal has helped many facilitate the sharing of ideas and resources in the field of distance education and communication that would otherwise be too impractical due to geographic limitations, time differences, and financial constraints. The routine business that I, and thousands of others, now conduct with colleagues in countries all over the world via BITNET is recreating us in the image of the global citizen. In short, it has become obvious to me that international networking, whether among university colleagues or seventh grade science students, politicians or business people, is our best offense to counteract ballistics.

LET'S BRING BITNET TO THE SOVIET UNION. It will be a struggle to bridge language barriers and to work through the hardware problems, but it is certainly doable. The last issue of the Journal contained an article by a university professor in the United States who has established an electronic mail relationship with colleagues in the USSR. The Office of Automated Systems in Moscow has leased lines into Scandanavia, an area that is very active in the BITNET, EARN, Netnorth network.

LET'S BRING BITNET TO THE SOVIET UNION. And let's make it as easy as possible. Let's send someone to the USSR to help them with the paperwork, the logistics, the hardware. And let's invite the

Soviets to our facilities as well.

LET'S BRING BITNET TO THE SOVIET UNION. But let's not be naive. To allow BITNET to become the same kind of force that it has become in the west is asking a lot from a government that has presided over an information constrained culture for a half century. But the Soviet Union is changing. The worst that could happen is that they would say 'no thank you.'

LET'S BRING BITNET TO THE SOVIET UNION. More than likely, we will make history.

ITEM #9

APPENDIX- ABOUT THE JOURNAL
by the editor

WHAT IS THE ONLINE JOURNAL OF DISTANCE EDUCATION AND COMMUNICATION ?

[What follows is an excerpt from the first issue of the Journal. Feel free to send suggestions to the editor.]

> This first issue will be primarily concerned with the Journal itself. Once we provide an idea of the Journal's identity and direction, we hope you will contribute to this rapidly growing field of education and communication.

THE MEDIUM

> We want short contributions, 4 screens maximum. Rather than trying to compete with a paper-based magazine which does a much better job of presenting long articles, we want contributions that present overview information. Based upon information gleaned in contributions, readers can directly contact the author for more details.

THE MESSAGE

> The issues that the Journal is concerned with fall into four basic content areas:
>
> > Content Area #1- Distance Education
> >
> > The Journal is interested in distance education as the organized method of reaching geographically disadvantaged learners, whether K-12, post secondary, or general enrichment students. Areas of interest include:
> >
> > - delivery technologies,
> > - pedagogy,
> > - cross cultural issues implicit in wide area education delivery,
> > - distance education projects that you are involved with,
> > - announcements about distance education conferences, workshops, or programs of study,
> > - anything else regarding the theory and practice of distance education.

Content Area #2- Distance Communications

The Journal recognizes that education encompasses a broad area of experience and that distance education includes distance communications that fall outside the domain of formal learning. The Journal welcomes contributions that deal with serving people at a distance who aren't necessarily associated with a learning institution. The Journal welcomes information about, for examples:

- public radio and television efforts to promote cultural awareness,
- governmental efforts to inform a distant public about social issues,
- or the many training programs run by private business to upgrade employee skills.

Content Area #3- Telecommunications in Education

Once the distance education infrastructure is solidly in place, local learners will want to tap into it, because they simply prefer learning in a decentralized setting or because they want to expand their learning opportunities and resources beyond those immediately available to them. This phenomenon, which we call 'bringing distance education home,' will grow in the coming years and we look forward to hearing from people about telecommunications in education, as a tool or a content area.

Content Area #4- Cross Cultural Communication Efforts, Particularly Between the US and the USSR

The Journal is interested in projects concerned with overcoming cultural barriers through the use of electronic communication. The Journal particularly looks forward to contributions concerning:

- efforts to improve electronic communication between the USSR and the US
- international electronic conferences
- cultural domination through the inappropriate use of media
- the use of telecommunications to promote understanding of the human condition

---

To subscribe to The Online Journal of Distance Education and Communication, send the following command to LISTSERV@UWAVM :

SUB DISTED your_full_name

All contributions should be sent to JADIST@ALASKA

Any other questions about DISTED can be sent to: Jason B. Ohler, Editor

JFJBO@ALASKA
or

Paul J. Coffin
JXPJC@ALASKA
Disclaimer: The above were the opinions of the individual contributors and in no way reflect the views of the University of Alaska.

End of the Online Journal of Distance Education & Communication