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ABSTRACT

Personal computers and the many telecommunications options will have an important role in the facilitation of improved professional practice of adult educators. Three items are needed to set up for telecommunications: the personal computer, the modem, and a communications (software) package. Potential uses of personal computers by adult educators include bibliographic and information searches; bulletin boards to share information and networks; a more sophisticated use of the bulletin board notion; and data transfer and communication. Adult educators can use bulletin board systems to communicate at the local, regional, or national levels. Adult education organizations can apply computer technology as an information delivery tool, a linkage between agencies, and an enhancement to referral activities. Computers can also make easier a variety of administrative activities--budget planning, word processing, and data management. Implications related to telecommunication technology for adult educators are a need for information dissemination, a need to develop a linkage to commercial vendors of hardware and software, and a need for a national commitment to provide for computer literacy. (Appendixes include a bibliography, a glossary, and sample computer materials.) (YLB)

Personal Computers, Telecommunications, and the Adult Education Professional

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A Presentation Made at the
National Adult Education Conference
Louisville, Kentucky
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INTRODUCTION

The computer revolution is rapidly finding ways to affect the lives of all citizens. It affects the way we bank, shop, and pay our bills. It impacts on us in the work place more each day, including the way we think about our jobs, the nature of our jobs, and even where we do our work. It also has overtones of "1984" in terms of information storage and accessibility which pose various moral and ethical issues that must be dealt with.

It has only been a short quarter of a century ago that a few manufacturers and universities began developing and using electronic computers. These massive first generation computers required considerable space, were quite slow in comparison with what we now are accustomed to, and required considerable data processing equipment in support of any computing activities. The large "main frame" operations of the sixties and the mini-computers of the seventies represented further advances in available computer technology.

However, it was not until the late seventies and early eighties when the "microchip" enabled miniaturization of computers into today's products that the real impact of computers on every day life began to take place. The advantages of individualization, portability, capability of operating with a variety of programming languages, and affordable prices have now put the computer within the reach of average citizens. The continual development of "chips" that are smaller and with even larger kilobytes of storage places future computer technology almost into the realm of incomprehensibility. Semiconductors using biological materials, such as protein-lipid membranes, "bio-chips," suggest that microcircuits as much as 500 times smaller than current silicon based chips are possible (Computerworld, 1983).

Thus, computers are exerting various forces that are altering society in many ways. It is the contention of the authors that these changes are especially important for professional educators, many of whom will be able to greatly alter the way they "do business." This presentation will focus therefore on the role of personal computers and the many telecommunication options in facilitating improved professional practice. Special attention will be given to the resources, practices, and needs of adult educators.

TECHNICAL ASPECTS OF TELECOMMUNICATIONS

Telecommunications is available for any person that has a personal computer and a few peripherals that can be attached to that machine. Basically, there is need for three items: 1) The computer, 2) a modem, and 3) a communications package for your particular computer. The following information might help in making an informed decision about how to set up for telecommunications.

The personal computer is the first piece of hardware (equipment) that is needed. Almost any computer can be made to work for telecommunications as long as it can be equipped with a

plug for communications. This plug is usually referred to in the industry as an RS-232C interface. It is also known as an asynchronous communications port or a serial port. This connector is very important since you can't hook up to a telephone line or another computer without it. Apple, IBM, and Commadore computers can all be hooked up by purchasing the RS-232C as an add-on package. Some computers like the KayPro, Seequa Chameleon, Radio Shack Color Computer or Model 100, and the NEC PS 8201 have the RS-232C already built in. This is convenient and a cost savings.

The modem is a piece of equipment that attaches to the computer and permits the computer to talk over a telephone line. The word modem stands for MOdulate - DEModulate and describes what the equipment does to the signal so that it can be transmitted over telephone lines. The modem comes in two styles, internal and external. Computers with internal expansion slots can be provided with a modem that actually plugs into the inside of the machine. This is handy since the modem is then always with the machine, can be hooked to the telephone line, and all dialing and communicating can be done directly from the keyboard of the computer. An external modem hooks up to the RS-232C interface that we mentioned above. Some external modems can be automatically dialed and will automatically answer if someone calls the computer. Others hook to the telephone directly or via a sound coupler in such a way that you must dial the phone and connect the call yourself. The positive side of this type of modem is that it can serve as the modem for several computers whereas the internal modem is functional only with the computer in which it is installed.

Modems operate at different speeds. The most common at this time is what is known as a 300 BAUD modem. This means that the modem is capable of sending and receiving messages at the rate of 300 bits per second (bps). This translates to about 30 characters per second of transmission. The second most popular modem supported by the current state of telecommunications is the 1200 bps modem. This modem is capable of sending and receiving data at the rate of 120 characters per second. This is not the fastest modem by any means, but the data bases that are accessible to most users are available only in 300 and 1200 bps configurations. As a matter of fact, the 300 Baud modem is the best choice at this time due to the fact that it is supported by the most data bases, is cheaper to buy, and does everything the average user would want. The industry names for the different modems are: 1) Bell Standard 303 for the 300 bps modem and 2) Bell standard 212 for the 1200 bps modem. Although there are modems that are both 300 and 1200 bps, be careful when buying a 1200 bps modem to make sure that it also includes 300 bps. The two rates of speed use completely different circuitry and there is a chance that an inexpensive 1200 bps modem does not contain the 300 bps circuit.

The last thing that you need is a software package (the program to make the computer work) that supports telecommunications. There are two types of software packages that basically turn your computer into a remote terminal for the computer that you are calling. These two types are called either "smart" or "dumb." The dumb terminal lets you

communicate with the host computer but does not let you save any of the information that you see coming from the host computer. It is just a keyboard and screen. This is not very practical for the data base user since it often is necessary to have a hard copy of the information that is retrieved. The smart terminal is what is needed for a practical use of telecommunications as it lets you hook up to a host computer, transfer information to and from your computer's disk drives and the host computer, print information as it comes to your computer from the host, and configure your computer to be virtually any other type of terminal. This package also makes it easy to transfer information directly from your microcomputer to another microcomputer by hooking them together at the RS-232 port. Depending upon the computer, this transfer can be done very rapidly - up to 19200 bps.

Now with a computer, modem, and communication package you are ready to hook up to the exciting world of bulletin boards, computer catalogs, news services, information data bases, Dow Jones-type services, the main frame computers of various organizations, and all of the rest of the world of telecommunications.

POTENTIAL USES

The four presenters all own one or more personal computers (there actually are nine such computers between us). We have therefore accumulated many, many hours of professional and personal experience with computers. We have discovered a number of ways we believe the personal computer can be used to not only make our professional lives better, but to also enhance our work in some ways we never could have predicted only a few years ago. Although we will focus at least our initial remarks on the telecommunication applications, we are prepared and will be pleased to describe the various other ways computers have influenced our lives.

Subsequently, we will describe three areas as central themes for our discussion and demonstration. They are intended to serve as general areas for discussion, interaction, and feedback.

AREA 1: BIBLIOGRAPHIC AND INFORMATION SEARCHES

We are fortunate at Syracuse University to have the majority of our needed library resources on-line. SULIRS (Syracuse University Library Information Research System) provides through telephone modem connection instant bibliographic search capabilities via author, title, subject, and other categories. The library is constantly expanding the material that is catalogued and eventually plans both an interactive and journal article titles storage capability. Students, faculty, and anyone else willing to pay phone costs can access the system.

Our Office of Sponsored Programs also provides a computerized search resource pertaining to funding possibilities. The interested faculty member or student can

search out government grants, scholarships, foundation research priorities, etc. The office also will provide template (boilerplate) information and general budget planning and preparation assistance via an interactive computer activity.

Other services that are available at this time outside of Syracuse University are the national on-line services that formerly were only available to institutions and libraries. ERIC searches, Social Science Citation Index searches, and various medically-related search programs are among the many data bases that are accessible through services such as BRS After Dark. These are the same services that are available to large institutions and library retrieval operations. Access in non-prime time also provides a cost saving for those who do repeated search operations.

AREA 2: BULLETIN BOARD AND NETWORKING

Computers can be used to share information with other people through the use of electronic bulletin boards (Ludden, Roudebush, & Weaver, 1983). A Bulletin Board System is a shared system, usually free to the user, that is primarily maintained for the information and use of users within a specific geographic area. These systems offer the opportunity to communicate with other computer users regarding information exchange, system help, software exchange, and messages of any sort. They function much the same as the physical bulletin boards that one sees in various public locations. A user posts a message on the board and awaits an answer. In some ways the bulletin board system is like the early use of CB radio with specialized audiences communicating with some special jargon about subjects that interest them. Bulletin board systems also contain games, programs that are in the public domain, and, in some cases, on-line storage and work space. These systems are becoming more and more sophisticated and offer an inexpensive way to communicate with fellow computer users. There are literally hundreds of such systems in the country and the chances are good that there is one or more operating in the area where you live. Bulletin board systems are run typically by dedicated computer buffs who enjoy helping less ambitious users maximize their computer abilities.

Adult educators can utilize such systems to communicate with colleagues at the local level. The addition of telecommunication outreach quickly expands the level to regional or national areas. Another potential use would be to leave messages of various types for an office or organizational secretary or some comparable person to utilize in carrying out some of your professional responsibilities. You no doubt can think of other uses.

A somewhat more sophisticated use of the bulletin board notion is the development of networks. Networks that allow the exchange of information and services between computers already exist and will continue to grow. For example, Knight-Ridder plans to introduce Viewtron, a specialized terminal that converts a television set and telephone line into a computerized communications system for news, travel information, a reading service, an encyclopedia service, etc. (Mayer, 1983).

Syracuse University currently belongs to a sophisticated system called the BITNET Network. This system provides a networking link between many different organizations and institutions. For example, the majority of higher education institutions with graduate programs of adult education belong to BITNET. The ability to exchange adult education information across such a network is not yet developed well but the potential is practically unlimited. A related system is called EMAIL. This ties together the bulletin board notion with networking and facilitates the sending of electronic mail across a fairly large system. Other national networks, such as the Source and Compuserve, provide similar capabilities. Both Syracuse University's and the University of Georgia's Adult Education Programs currently are exploring the development of a system that will facilitate the transmission of journal articles, book reviews, and other scholarly information via electronic means.

AREA 3: DATA TRANSFER AND COMMUNICATION

An important feature of computers is that large amounts of data and information can be transferred quickly between two systems. With the proper hardware in place computer users can realize a savings in both time and money. Personal computer users might hook up their units to at least three sources: 1) data banks, 2) other personal computers, and 3) larger "mainframe" computers. When it comes to data banks we are just beginning to witness the birth of a new range of services. For example, computer users may "subscribe" to the Dow Jones listings, information sources, reference banks, shop-by-computer services, banking and money management systems, interactive multi-user games, or just plain computer assisted discussion groups. For a fee, adult educators may enjoy a range of services from these data banks, including weather and news reports, source material, new friends, computer advice, free programs, an order of flowers, an airline ticket, or the latest stock quotations.

In some offices many computers are always hooked together so that it is fast (a few seconds) and easy (pusning one or two keys) to transfer files, even whole manuscripts, for example, between units. At Syracuse University it is possible to transfer a manuscript directly to our printing service's computer; they, in turn, will format, edit, and print it out in any final form we wish. It also is possible to transfer information between computers from long distances via telecommunications as described earlier. The utility of this convenience is that memos, letters, manuscripts, reports, etc. may be transferred from one location to another quickly and usually inexpensively. In addition, two-way communication via the keyboard can be accomplished. For instance, two co-authors some distance apart could work on a manuscript together, editing, changing, and finalizing the paper on the spot.

Thus, adult education organizations can apply computer technology as an information delivery tool, as a linkage between agencies, and to enhance referral activities. Computer also can facilitate a variety of administrative activities such as budget

planning (spreadsheets), word processing, and data management - all via telecommunication means if necessary.

SOME ISSUES

The following are some of the issues that came to the authors' minds while brainstorming on the implications and questions for adult educators related to all this telecommunication technology. Your interaction and feedback is welcome.

1. We must proactively seize innovations and make them work for both the adult educator and the adult education client.

2. We must examine technological innovations to ensure that they don't create hostile environments for certain segments of the population.

3. We need to develop a process of information dissemination so that educational implications related to technology can be made available to all individuals in society.

4. We need to develop a linkage to commercial venders of hardware and software so they can become involved in the development of materials, technology, and innovations friendly to all potential adult users.

5. We need to develop information that will be effective in facilitating policy makers, program planners, and others who in some way impact on the adult client.

6. What are the legal, moral, and ethical concerns that need to be addressed in conceiving of telecommunication uses of personal computers?

7. Is the language and technology required for the use of personal computers another literacy level that will further alienate certain segments of society?

8. What does the future hold in store and what are the implications for adult education? (summarized from Ludden, Roudebush, & Weaver, 1983)

More power for less money

Increased storage capacity

Introduction of new technologies (new chips, fiber optics, etc.)

Extension of the computer (voice recognition, computerized speech, visual pattern recognition, hydraulic arms and legs, and tactile recognition)

Computer networks

Intelligent computers (artificial intelligence).

9. There is a need for a national commitment to provide for computer literacy:

We need to find ways of overcoming costs so that a "haves" and "havenots" does not exist in terms of computer ownership and access

Perhaps this includes working more closely with Japan

Educators and manufacturers-engineers need to work together more closely

Educators need to concentrate on how the computer can improve the learning process

We must learn how to apply the computer to learning, not just using the computer as an aide to learning, especially in such areas as literacy education

We must learn how to deal with the ethical and moral issues involved with computers

We need a process of dissemination of the type of information generated in this presentation to planning and social agencies so that they can understand and use the technology.

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SELECTED PERIODICALS

A+	Micro Computing
Byte	Micro Systems
Compute	PC
Computerworld	PC jr
Connect	PC Tech Journal
Creative Computing	PC Week
Educational Technology	PC World
Electronic Learning in Cider	Personal Computing
80 Micro	Popular Computing
Microcomputer Communications	Portable 100

INFORMATION UTILITIES

1. THE SOURCE
   1616 Andreson Road
   McLean, VA 22102

   Hours of Operation: 24 hours a day
   (down once or twice a week for maintenance. Usually Wednesdays and Thursday between 4:00 a.m. and 5:00 a.m.

   Customer Support: 800/336-3300
   (24 hours a day) 703/734-7540 in Virginia
   Canadian callers may call collect

2. COMPUSERVE
   Compuservice Information Service
   5000 Arlington Centre Blvd.
   PO Box 20212
   Columbus, OH 43220

   Hours of Operation: weekdays 6:00 p.m. to 5:00 a.m. (your local time)
   all day weekends and holidays

   Customer Support: 800/848-8990 from anywhere in US and contiguous countries
   614/457-8650 when calling within Ohio
   Hours: 8 a.m. to midnight EST, Monday-Friday
   2 p.m. to midnight EST, weekends

INFORMATION UTILITIES (cont.)

3. DOW JONES NEWS/RETRIEVAL SERVICE
PO Box 300
Princeton, NJ 08540

Hours of Operation: 6:00 p.m. to 4:00 a.m. EST, seven days a week

Customer Support: 800/257-5114
609/452-1511 in New Jersey
Hours: 9 a.m. to 11 p.m. EST, Monday-Friday
9 a.m. to 5 p.m. EST, Saturday

GLOSSARY OF SELECTED TERMS

ASCII - American Standard Code for Information Interchange - the standard code understood by most computers, regardless of operating system.

AUTO ANSWER - AUTO DIAL - modems that will automatically answer another modem when it is called and will accepted automatic dial commands to connect with another computer.

BAUD - The term used to describe the rate at which information is transferred through a modem. To 600 BAUD it represents the bits per second sent through the modem. i.e., 300 BAUD = 300 BPS.

BELL 103 - The standard for sending information through the technique of frequency shift keying. This is the technology of the 300 BAUD modems.

BELL 212A - The standard for sending information at higher rates of speed using the technology of phase shifting rather than frequency shifting. These modems transfer information at 1200 BPS and up.

COMMUNICATIONS PROGRAM - Software or firmware that turns a personal computer into a data terminal. There are basically two types of terminal emulation programs, 1)smart terminal and 2)dumb terminal.

DATA SET - Another term that can be used to describe the modem.

DATA TERMINAL - The term used to describe the hardware that is sending data to the data set. for the purposes of this discussion it will be assumed to be a personal computer with a communications software package.

DISK - The storage medium where information is placed for permanent storage. It can be thought of as an electronic file cabinet where documents are stored.

DISK DRIVE - The device that records and plays back the information stored on the disks.

DOWN-LOAD - The term for receiving information sent by another computer and saving it in memory or on disk.

DUMB TERMINAL - This terminal has very limited internal memory and does not have the ability to save any of the information being sent from the host. Generally when the information scrolls off of the terminal screen it is lost.

FIRMWARE - Program applications that are supplied in ROM packages.

HARDWARE - The machinery of the computer. This includes such items as keyboard, RAM, disk drives, moniter, CPU and the electronics of the computer.

MODEM - the device that MOdulates and DEModulates the computer signal over standard telephone lines.

NULL MODEM - This is used between two computers when hooking the RS-232 ports together for direct information transfer. It basically fools the computers into thinking that there is a modem between them.

ON-LINE - Connected to another source. This is often used when the computer is hooked, by way of a modem, to a host computer.

PARALLEL DATA TRANSMISSION - The computer sends out information eight bits at a time, each with its won line for transmission. Generally the standard for personal computers is that serial transmission is used for communication, by modem or from computer to computer, and parallel is used to send information to a printer.

RAM - Random Access Memory - internal curcuits that can be accessed either by writing to them or reading from them. The usable memory of the computer.

ROM - Read Only Memory - internal curcuits that can only be read by the computer and can not have information written on them or changed.

RS-232C - The industry standard for communication interface between computer and modem, and computer and computer. This is also known as a serial communication port.

SERIAL DATA TRANSMISSION - The computer sends out one bit of information at a time in a sequential stream.

SMART TERMINAL - This is a terminal that can send information to a host computer and also receive information from a host computer. Some of the functions are the ability to save information sent by the host computer to the terminal's own storage medium (usually disks), ability to transfer information from the disks of the terminal to the host computer, and the ability to print the information that is coming from the host computer on a printer hooked to the terminal.

SOFTWARE - The programs that are loaded into the memory of the computer to serve special functions. In most cases the software applies to that material purchased on disk for application to a specific function.

UP-LOAD - The term for transmitting information from the memory of one computer to another computer.

Appendix A: Syracuse University Main Frame for General Computer Work

```
/LLOGOIGINN
LOGIN
JOB 17 Syracuse University 603A TTY2
#S[illegible]11,1.122
Password:

(15-Oct-84)  Output Bins will be Re-alphabetized

             On Wednesday morning (17-October) you will find that
             the Machinery Hall printed output bins have been
             re-alphabetized.  No big thing!

             The new arrangement will be strictly "top to bottom,
             left to right".

             Once you see it, the arrangement will be clear,
             especially inasmuch as the bins will be numbered
             as well as lettered.     frm

(11-Oct-84)  CAREERS IN MANAGEMENT INFORMATION SYSTEMS (MIS)

             Speaker:  Paul Hughes, Bristol Labs
             7 P.M., Tuesday, 16-October, 101 HL
             Sponsored by DPMA      frm

./K
Job 17 User VARTREES D [561,12]
Logged-off TTY2 at 10:02:11 on 23-Oct-84
Runtime: 0:00:00, KCS: 4, Connect time: 0:01:07
Disk Reads: 101, Writes: 5, Blocks saved: 2910
Year-To-Date Account Usage: 92%
.
C33) SU TIMESHARING 10.02.39 TUE 10/23/84 V1M109 (PORT)
```

Appendix B: Qualog - Qualitative Data Analysis Program Via the SU Computer

INTERVIEW#1 - APRIL 1984
INTERVIEWER -

0001 Q - MY RESEARCH HAS TO DO WITH THE CAREERS OF PRINCIPALS -
0002 WHAT PRINCIPALS HAVE DONE IN THEIR MOVEMENT IN THEIR
0003 CAREERS. AND I START WITH A SIMPLE QUESTION - HOW DID
0004 YOU GET TO THIS POSITION?
0005
0006 A - WELL, I STARTED - MY TEACHING CAREER STARTED OUT IN A
0007 SMALL RURAL SCHOOL DISTRICT IN SENECA COUNTY - ROMULUS -
0008 AND WHEN I WENT TO COLLEGE I HAD NO INTENTION OF GOING
0009 INTO EDUCATION - NEVER TOOK AN EDUCATION COURSE IN MY
0010 LIFE. I GRADUATED FROM COLLEGE IN '68 WHICH WAS THE
0011 HEIGHT OF THE VIET NAM CRISIS AND JUST FIGURED IT WAS
0012 JUST A MATTER OF DAYS BEFORE I WAS DRAFTED AND SO I WENT
0013 BACK HOME FOR THAT SUMMER AND THE ATHLETIC DIRECTOR IN
0014 ROMULUS LIVED IN THE SAME TOWN THAT I LIVED IN AND HE
0015 SAID, WHAT ARE YOU GOING TO DO WITH YOUSELF NOW THAT YOU
0016 HAVE A DEGREE IN HISTORY AND YOU'RE SITTING AROUND
0017 WAITING FOR A JOB? AND I SAID, WELL, I HAD ALREADY
0018 SIGNED UP FOR O.C.S. - I FIGURED IF I WAS GOING TO GET
0019 DRAFTED I WAS AT LEAST GOING TO GO AS AN OFFICER. AND HE
0020 SAID, WHY DON'T YOU COME DOWN AND JUST TALK TO US. SO I
0021 WENT DOWN AND TALKED TO THEM AND THEY WERE CREATING A
0022 PROGRAM - IT WAS LIKE A RESOURCE ROOM - I THINK THEY WERE
0023 A LITTLE BIT OF THEIR TIME FOR SUCH A BACKWARDS DISTRICT
0024 - BUT THEY OFFERED ME THAT POSITION ALONG WITH THAT
0025 FOOTBALL COACHING JOB AND BEING AN EX-JOCK AND FIGURE,
0026 GOD, HERE'S A WAY TO REALLY GIVE IT A GOOD SHOT - SO I
0027 ACCEPTED THE POSITION AND BASED UPON THE POSITION I HAD
0028 THE DEFERMENT FOR FIVE YEARS OR WHATEVER IT WAS, EVERY
0029 YEAR I HAD TO REAPPLY, SO I TAUGHT IN THAT SITUATION FOR
0030 SEVEN YEARS AND DURING THAT TIME I BEGAN W WORKING ON MY
0031 CERTIFICATION AND I REALLY DIDN'T INTENTIONALLY GO INTO
0032 ADMINISTRATION AT THAT TIME EITHER IT JUST SO HAPPENED
0033 THERE WERE A COUPLE OF COURSES THAT WERE OFFERED IN
0034 CANANDAIGUA, HAPS COURSE BEING ONE OF THEM, AND IT WORKED
0035 OUT NICELY. YOU KNOW, TWO WEEKS AND YOU GET SIX HOURS
0036 OUT OF THE WAY AND YOU STILL HAVE MOST OF THE SUMMER TO
0037 YOURSELF. SO I TOOK THOSE AND THEN KIND OF GOT TURNED ON
0038 TO - YOU KNOW, MAYBE ADMINISTRATION WOULDN'T BE A BAD
0039 DIRECTION TO GO. YOU KNOW, YOU LIKE BEING IN CHARGE OF
0040 THINGS -YOU LIKE DELEGATING, YOU KNOW, SEEING THINGS

Appendix C: SULIRS Computerized Library Search Program

```
ENTER SEARCH: AU;KNOWLES,MALCOLM
SEARCHING "AU; KNOWLES "
SEARCHING "AU; MALCOLM "
  17 ITEMS. PRESS RETURN FOR DISPLAY, OR S AND RETURN FOR NEW SEARCH:

   1. KNOWLES, MALCOLM SHEPHERD
   ADULT EDUCATION MOVEMENT IN THE UNITED STATES
  NEW YORK, HOLT, RINEHART AND WINSTON, 1962
     LC5251.K73 ;  4TH FLOOR-BIRD ;  IN RESERVE ROOM-1ST FLOOR BIRD

   2. KNOWLES, MALCOLM SHEPHERD, 1913-
   THE MODERN PRACTICE OF ADULT EDUCATION; ANDRAGOGY VERSUS PEDAGOGY
  NEW YORK, ASSOCIATION PRESS, 1970
     LC5215.K62 ;  4TH FLOOR-BIRD

   3. KNOWLES, MALCOLM SHEPHERD
   HIGHER ADULT EDUCATION IN THE UNITED STATES ;  S1969
     LC5251.K56 ;  4TH FLOOR-BIRD

   4. KNOWLES, MALCOLM SHEPHERD
   INTRODUCTION TO GROUP DYNAMICS ;  REV., NEW YORK, ASSOCIATIoN PRESS, 1972
     HM131.K62 1972 ;  4TH FLOOR-BIRD

   5. KNOWLES, MALCOLM S
   INFORMAL ADULT EDUCATION ;  NEW YORK, ASSOCIATION PRESS, 1950
     LC5216.K6 ;  4TH FLOOR-BIRD

  17 ITEMS. PRESS RETURN FOR DISPLAY, OR S AND RETURN FOR NEW SEARCH:
```

```
WELCOME TO THE OFFICE OF SPONSORED PROGRAMS' SEARCH SYSTEM.
WOULD YOU LIKE INSTRUCTIONS?      NO
ENTER YOUR NAME.....ROGER HIEMSTRA
ENTER YOUR DEPARTMENT.....ADULT EDUCATION
THANK YOU
WOuLD YOU LIKE THE SEARCH SYSTEM NEWS?(Y,N)      Y
**
OCT 26,1984
NCAR RESEARCH AVIATION FACILITY OPERATES FIVE AIRCRAFT IN SUPPORT OF FIELD
PROJGCTS IN THE AREAS OF AIR CHEMISTRY, CLOUD PHYSICS, AIR MOTION (INCLUDING
MASS FLOW AND TURBULENT FLUX MEASUREMENTS), RADIATION, PHYSICAL OCEANOGRAPHY
AND AIR-CEA INTERACTION AND OTHER PROGRAMS WITHIN THE ATMOSPHERIC SCIENCES.
REQ)ESTS FOR NCAR FLIGHT SUPPORT FOR PROGRAMS WITHIN THE CONTEXT OF NSF
GRANTS SHOULD INCLUDE A COPY OF THE NSF PROPOSAL....IN ORDER TO BE CONSIDRED
BY THE APRIL 1985 MEETMNG, REQUESTS MUST BE SUBMITTED NO LATER THAN 2/8/85.
ADDITIONAL INORMATION IS AVAILABLE FROM THE RESEARCH AVIATION FACILITY (303)
497-1036.


WOULD YOU LIKE TO DO A SEARCH?(Y,N)      Y
WOULD YOU LIKE TO DO A PROPOSAL BUDGET?(Y,N)     N
CEARCH SYSTEM OPEN
SEARCH BY [K]EYWORD OR [R]OOT-OF-WORD...ADULT

KEYWORD?(RETURN TO STOP)      ADULT
 1) GT/ ADULT EDUCATION GRANTS TO STATES


********** SPONSOR NUMBER 1    **********
DD/ JUL 1
GT/ ADULT EDUCATION GRANTS TO STATES
RS/ FOR DESIGNATED STATE EDUCATION AGENCIES ONLY; A THREE-YEAR STATE PLAN IS REQ
UIRED.
AN/ TO EXPAND EDUCATIONAL OPPORTUNITIES AND ENCOURAGE THE ESTABLISHMENT OF PROGR
AMS OF ADULT
EDUCATION TO THE LEVEL OF COMPLETION OF [ECONDARY SCHOOL, MAKING AVAILABLE THE M
EANS TO SECURE
TRAINING THAT WILL ENABLE ADULTS TO BECOME MORE PRODUCTIVE AND RESPONSIBLE CITIZ
ENS. THIS PROGRAM
IS PROPOSED FOR FUNDING UNDER THE BLOCK GRANT PROGRAM.
TL/ PAUL V. DELKER, DIVISION OF ADULT EDUCATION SERVICE[, OFFICE OF VOCATIONAL A
ND ADULT
EDUCATION, (202) 245-9793
OR/ DEPARTMENT OF EDUCATION
TP/ F
PG/ 84.002
LN/ WASHINGTON, DC
ZP/ 20202
$$/ $72,375-$7,701,93 AVERAGE GRANT $1,666,667.
PM/ R
LBo AE ED SS SE EL

KEYWORD LIST:
 \ADULT EDUCATION GRANTS TO (TATES\  \DEPARTMENT OF EDUCATION\  \ADULT EDUCATION
\  \ADULT\  \SECONDARY SCHOOL\
```

Appendix E: Sample of BITNET Network Membership List

Below are the sites and computers which are connected via or associated with the BITNET network as of 19 Mar 84. (See also NOTES: at bottom.)

Node:	System:	Connect:	Location/Comments:
* Argonne National Laboratory:			
ANLVM	VM/SP	RSCS	Argonne National Laboratory
ANLOS	MVS	JES3	Argonne National Laboratory
ANLCHM	VMS	ANL/NJE	Argonne National Laboratory
ANLCMT	VMS	ANL/NJE	Argonne National Laboratory
ANLHEP	VMS	ANL/NJE	Argonne National Laboratory
ANLIPNS	VMS	ANL/NJE	Argonne National Laboratory
ANLPHY	VMS	ANL/NJE	Argonne National Laboratory
* Boston University:			
BOSTONU	VM/SP	RSCS	Boston University
* Brown University:			
BROWNVM	VM/SP2	RSCS	Brown University
BROWNCS	UNIX	UREP	Brown University Computer Science Lab
* Carnegie-Mellon University (CMU):			
CMCCTA	Tops-20	MAILER	Computation Center Tops-20 A
CMCCTB	Tops-20	MAILER	Computation Center Tops-20 B
CMCCTC	Tops-20	MAILER	Computation Center Tops-20 C
CMCCTD	Tops-20	MAILER	Computation Center Tops-20 D
CMCCTE	Tops-20	MAILER	Computation Center Tops-20 E
CMCCTF	Tops-20	MAILER	Computation Center Tops-20 F
CMCCVA	VMS	MAILER	Computation Center VAX/VMS
CMCCVC	VMS	MAILER	Computation Center VAX/VMS
CMCSC	Tops-20	MAILER	CS Department Tops-20 (Arpa: CMU-CS-C)
CMCSPS	VMS	MAILER	CS Department VAX/VMS
CMPHYS	VMS	MAILER	Physics Department VAX/VMS
CMPSYA	VMS	MAILER	Psychology Department VAX/VMS
* Case Western Reserve University (CWRU):			
CWRU20	Tops-20	MAILER	Case Western Reserve - A
CWR20B	Tops-20	MAILER	Case Western Reserve - B
CWR20C	Tops-20	MAILER	Case Western Reserve - C
* City University of New York (CUNY):			
CUNYVM	VM/SP2	RSCS	City University of New York
CUNYUTS	UNIX	MAILER	City University of New York (Amdahl Unix)
CUNYJES3	MVS	JES3	City University of New York (Wylbur under MVS)
CUNYVMS1	VMS	jnet	CUNY - Graduate Center
BBADMIN	VM/SP	RSCS	CUNY - Baruch College
BB003	VM/SP	RSCS	CUNY - Baruch College
BC003		RSCS	alias for BKLYN
BC008		RSCS	alias for BKLYN
BKLYN	VM/SP	RSCS	CUNY - Brooklyn College
BMACADM	VM/SP	RSCS	CUNY - Boro of Manhattan Comm College
BMADMN2		RSCS	alias for BM002
BM002	VM/SP	RSCS	CUNY - Boro of Manhattan Comm College
BX001	VM/SP	RSCS	CUNY - Bronx Community College
CCNY	VM/SP	RSCS	CUNY - City College
HUNTER	VM/SP	RSCS	CUNY - Hunter College
KB001	VM/SP	RSCS	CUNY - Kingsborough Comm College
LEHMAN	VM/SP	RSCS	CUNY - Lehman College
NY001	VM/SP	RSCS	CUNY - NYC Technical College

Appendix F: Sample of EMAIL Users Guide

INTRODUCTION

The EMAIL command is a simple method of sending electronic mail to other computer users. Mail can be addressed to both local and remote users or any mixture of the two.

You can get online HELP about EMAIL by giving the command HELP CMS EMAIL.

I assume that you are familiar with XEDIT, the file editor for CMS, and that you already have a CMS account.

For further information about remote systems attached to BITNET, consult CCIS Memo GI39 "BITNET - National Network of University Computers." Print this memo with the command

MANUALS GI39

THE EMAIL COMMAND

The EMAIL command is patterned closely after the CMS NOTE command. If you are a NOTE user already, you should be able immediately to use EMAIL.

The following is a summary of the arguments and options of the EMAIL command.

```
EMAIL     name...    CC: name...    ( options...
          |
          options:
          |
          |ADd
          |Cancel
          |FORward
          |LOG | NOLog
          |NOTebook fn | NONotebook
          |PROFile fn
          |Replace
          |REPLY
          |SENd fn | fn ft | fn ft fm
          |SUBject subject-text
          |
          |   Options without effect (nops):
          |   ACk      NOAck
          |   LONg     SHort
```

Appendix G: Sample of a National Bulletin Board's Manual

EFFECTIVE AUGUST 1, 1984, USING THE WATS 800 SERVICE TO CONNECT TO EASYLINK WILL CARRY A $.15 PER MINUTE SURCHARGE IN ADDITION TO THE $.15 CONNECT CHARGE CURRENTLY IN EFFECT. THIS SURCHARGE WILL APPLY ON ALL MESSAGES SENT TO AN EASYLINK MAILBOX OR TO A TELEX TERMINAL IN THE U. S., CANADA AND MEXICO.

ALSO EFFECTIVE AUGUST 1, 1984, MESSAGES LEFT IN YOUR MAILBOX AFTER 10 CALENDAR DAYS WILL BE FORWARDED TO YOU AS MAILGRAM MESSAGES AT A COST OF $.50 PER MESSAGE. BE SURE TO READ YOUR MAIL REGULARLY.

TIPS ABOUT EASYLINK SERVICE

HOW TO MAKE SURE THAT YOUR MESSAGE WAS DELIVERED:

IF YOU ADDRESS A MESSAGE TO A:
- TELEX/TWX NUMBER
- WORLDWIDE TELEX NUMBER
- EASYLINK NUMBER WHERE DELIVERY IS TO AN AUTO-ANSWER TERMINAL

THE EASYLINK SERVICE WILL ACCEPT YOUR MESSAGE AND DIAL OUT TO DELIVER IT, USUALLY WITHIN A FEW MINUTES. HOWEVER, IF A TERMINAL IS BUSY OR OUT OF ORDER, EASYLINK WILL RETRY DELIVERING THE MESSAGE A NUMBER OF TIMES WITHIN TWO HOURS. IF THE MESSAGE STILL CANNOT BE DELIVERED AFTER THESE RETRYS, THE MESSAGE WILL BE CANCELLED AND A CANCELLATION NOTICE SENT TO YOU. A LIST OF THESE NOTICES IS ON PG. 5-5 IN YOUR EASYLINK USER GUIDE.

IF YOU WISH TO CONFIRM DELIVERY OF YOUR MESSAGE TO THE RECEIVER'S TERMINAL, USE THE 'NOTIFICATION OF DELIVERY' FEATURE. ENTER /HELP NTF AFTER A PTS PROMPT TO LEARN HOW TO USE NOTIFICATION OF DELIVERY.

THE FOLLOWING INSTRUCTIONS ARE AVAILABLE TO HELP YOU USE EASYLINK.

TO DISPLAY ANY OF THESE INSTRUCTIONS, ENTER THE COMMAND FOR THE DESIRED INSTRUCTION FOLLOWED BY A CARRIAGE RETURN OR A CARRIAGE RETURN AND A LINE FEED.

HELP INSTRUCTIONS	COMMAND
INTRODUCTION TO EASYLINK	/HELP INTRO
ADDRESS TYPES HOW TO SEND TO A TELEX I, TELEX II (TWX) OR EASYLINK NUMBER	/HELP ADDRESS
HOW TO SEND TO A WORLDWIDE TELEX NUMBER	/HELP WUW
HOW TO SEND A MAILGRAM	/HELP ZIP
HOW TO SEND A TELEGRAM	/HELP PMS
HOW TO SEND A CABLEGRAM	/HELP INT