

1994

Use of Electronic Bulletin Board Systems in Iowa Public School Districts

Sylvia Stearns
University of Northern Iowa

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Use of Electronic Bulletin Board Systems in Iowa Public School Districts

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Abstract

This study was performed to learn if Iowa public schools were using internal or external BBS. Public school districts were assigned a number in the Iowa Educational Directory, 1992-93. Then using a random table, one hundred school districts were chosen. A letter, a questionnaire, and a self-addressed, stamped envelope were addressed to the superintendent asking him/her to forward the items to someone in the district who was knowledgeable about BBS. The letter, questionnaire, and envelope were sent April 30, 1993 and were the recipients were asked to return the questionnaire to the researcher by May 14, 1993. Of the questionnaires returned, sixty seven (82.7%) indicated that they did not use internal or external BBS. Fourteen (17.3%) of the respondents indicated they did use an internal or external BBS.

Teachers, media specialists, guidance counselors, administrators, and students used the varied BBS. Teachers were the most common users. Electronic mail, conferencing/chat, and database access were all being used by the school districts. BBS have been used since 1987 by school districts and by 1991, the fourteen positively responding school districts have used at least one BBS.

Many of the BBS used required no budgets. Ones that required financing were provided through grants, general funds, administration budget, or telecommunications budget. Three schools did not provide financial information. One internal BBS was established and maintained in an Iowa public school district. It was used by teachers, media specialists, guidance counselors, and administrators. It was used for electronic mail and messages for the school personnel. One school district used TOPS for the software and it is used on a Macintosh and IBM network.

Use of Electronic Bulletin Board
Systems in Iowa Public School Districts

A Graduate Paper
Submitted to the
Division of Library Science
Department of Curriculum and Instruction
in Partial Fulfillment
of the Requirements for the Degree
Master of Arts
UNIVERSITY OF NORTHERN IOWA

by

Sylvia Stearns

February 28, 1994

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This Research Paper by : Sylvia Stearns

Titled: Use of Electronic Bulletin Board Systems in Iowa Public School Districts

has been approved as meeting the research paper requirement for the Degree of Master of Arts.

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CHAPTER 1

Introduction

Telecommunications are commonly used today in businesses, homes, and schools. This technology allows people to have access to various kinds of information and communications. A bulletin board system (BBS) is one form of service that transmits and receives information over telephone lines. A BBS is a modem-equipped computer plus software that can communicate with other modem-equipped computers over ordinary telephone lines. The modem translates the computer's digital, textual, numerical, or graphical data into an analog signal that can be sent back and forth through the lines. The BBS software tells the computer what to do as a host for other computers that dial in. A person who wants to use the BBS from his/her computer, requires a communications software program and modem.

A BBS can include many activities or services. Six common functions are provided by BBS software: e-mail, conferencing, chat (or online conferencing), questionnaire or polling, file access, and random access of databases (Hudspeth, 1990). Any of these activities are useful to a school district. Exchange of paper for messages is avoided by using electronic mail. Conferencing occurs among people in different locations in a district instead of a few

people meeting in a central place. General interest bulletins can be posted on the BBS. Parents and teachers can be encouraged to establish better communications through electronic mail, conferencing, and general bulletins. Communication with the community is facilitated (Schack, 1987). These services are not only useful to staff and faculty members, but to students as well.

Purpose and significance

This exploratory study investigated the extent to which bulletin board systems were being used in public school districts in Iowa. Collection of this data makes it possible for researchers to compare the use of BBS in Iowa with that of other states. Data about other forms of information services such as CD-ROM use, software selection for schools, and educational technology use in schools have been published, but information about the use of telecommunications or bulletin board systems is not available. Bulletin board systems are being used by schools according to articles in professional journals, but data about who is using BBS, which services are being used, and how BBS are financed were not found. This survey was performed to answer these questions.

Problem statements

1. Are Iowa public school districts using external BBS?
2. Who uses the external BBS in the school district?
3. What services on the external BBS are use?
4. How long have the districts been using BBS?
5. How is the use of a BBS financed?
6. Have the districts established their own BBS and, if so, who used the system and for what purpose?
7. What BBS software and hardware are the school districts using for their in-district systems?

Hypotheses

1. Thirty percent or more of Iowa school districts will be using a BBS.
2. For school districts which are using external bulletin board systems:
 - (a) In eighty percent or more of the districts, teachers, media specialists, or administrators use the system.
 - (b) In fifty percent or more of the districts, students use the system.
 - (c) Access to databases is used in all districts, the electronic mail service is used in fifty percent of the districts

and the conferencing service is used in twenty percent of the districts.

(d) Fifty percent or more of the school districts will have used a system for two or more years.

(e) Costs for using the system will be paid from the districts' technology budget or the media center budget.

3. School districts which have established an in-district bulletin board system:

(a) Twenty-five percent or more of the districts have established a system.

(b) All districts use the system for internal communications such as e-mail, conferencing, and district/school announcements.

(c) In seventy-five percent or more of the districts, dial-in access is permitted for parents, students, and other community members.

Assumptions

Bulletin board systems have value in education because of the ease with which people can communicate with each other within and outside their buildings. BBS can be general or subject specific information sources, many of which schools can access.

Telecommunications can broaden our knowledge of technology, and educators can gain the necessary skills for accessing information beyond their schools.

Schools who use bulletin board systems have the necessary equipment, staff who are knowledgeable in the setup and use of BBS, and the necessary level of integrated technologies.

Limitations

Only use of electronic bulletin board systems, not commercial information services such as DIALOG, Prodigy, or Kidsnet, was investigated. Random sampling and all other limitations of the use of a questionnaire to gather data apply to this study.

Definitions

Bulletin Board System (BBS) An electronic message center. Most bulletin boards serve specific interest groups. They allow you to dial in with a modem, review messages left by others, and leave your own message if you want (Margolis, 1991). The acronym BBS is used in this paper to represent both singular and plural forms.

Communications software Terminal software which assists with protocol transfer, saving files, baud rates, and log on procedures. Some software contains a built-in text editor for creating messages

before sending or for editing received information.

Electronic Mail (e-mail) Sending and receiving messages through mainframe services, simple bulletin boards, or local area networks.

Log On This is required on a BBS before access is granted. It can involve a password, ID, or name, address, and phone number. Usually, it is not possible to have complete or full use of a system without being "validated" (authorized) by the system operator.

Modem A peripheral device which allows two computers to "talk" over the telephone lines. Since computers are digital and telephone lines analog, a conversion process is necessary. The word is an acronym for modulator/demodulator.

Network A connection of two or more computers. The concept can mean different types of connections such as a local area network (LAN) which has several computers connected (e.g. hardwired) together within the same building or office and where all computers in the network may share all of the peripherals in the system; or a network may also be a group of terminals or micros connected to a central computer or hard disk over telephone lines; while other networks connect users to a mainframe.

SYSOP An abridgment of the title "System Operator." A person who operates and manages a BBS.

Terminals A "smart" terminal is a microcomputer and can be used

to run a variety of programs as well as receive or transmit data. A

“dumb” terminal is limited to receiving and transmitting data.

Up/Downloading Sending data from one computer to another computer. This may be done using communication software.

Chapter 2

Literature Review

People are becoming more aware of available telecommunication services and have discovered that bulletin board systems are one kind of information service that can be easily accessed. BBS can be found in commercial networks, such as CompuServe, to give users multiple options for selecting BBS which meet their interests or needs. Businesses and school districts have created BBS to communicate within their own systems, but also with outside users. Individuals are also creating BBS on their own personal computers as a hobby or as another way of communicating with people of like interests. Usually, most BBS are subject related and require constant management by the system operator. Some possible services that BBS can offer are bulletins, e-mail, technical question and answer, public domain files, surveys or polls, online games, and live conferencing (Clark, 1988a). All of these services can be used by educational institutions.

Many schools have created their own BBS. San Leandro High School in California has a BBS named Open Campus. It features public and private messaging, up/downloading of software files, and various special interest data libraries such as school activities, clubs, discussion groups, and college information. Students,

teachers, community members, and parents can use the various options to find answers they want from the school. Passwords are not required, but registration is needed for a user to post messages or download software. Some files can be accessed by only certain persons, such as the Teacher Center by teachers. A directory of other regional BBS is also provided for those wanting to explore other options. This BBS was started by a science teacher at the high school, but is maintained by many of the students (Schack, 1987).

In Memphis, Tennessee, fifth and tenth graders had the opportunity to take part in the project ACOT sponsored by Apple Computer. Thirty students received Apple Ile's for their desks at school and Apple IIc's and modems for their homes, and ten secondary students received Apple IIc's and modems for their homes. Each secondary student was responsible for tutoring three fifth graders through their computers at home and the school's BBS. Discussion of any subject was encouraged to promote computer use and the fifth graders could contact their tutors for class assignments. The bulletin board was used by teachers as well. They posted questions for students to answer in class or in their teachers' electronic mailboxes and they also posted the daily assignments or notes for the students. This program was a great success and students, teachers, and parents were enthusiastic.

Students sent messages to each other, teachers reported that incomplete homework excuses decreased, and parents did not mind the telephone lines being tied up all the time (Erickson, 1987).

Many BBS are available for education, but may not be created by a school district. FrEdMail is an educational messaging network which joins over seventy local bulletin boards (Clark, 1990). It was developed by Al Rogers in cooperation with the San Diego Office of Education. It is a network devoted to the transmission of student writing. One popular use is for students to write letters to pen pals in other states (Colborn, 1989).

Another specialized network is being developed to provide access to government bulletin boards for the general public. As of September/October 1990, the idea of having the Government Printing Office in charge of preparing and distributing government information to the public through a BBS was a possibility. Another possible route would be to offer access through commercial telecommunication networks such as SprintNet or TYMNET. "By providing this service, the GPO would also be able to offer to agencies, which have not been able to develop their own bulletin boards, the opportunity to distribute their information electronically with little or no investment" (Jacobs, 1990). This type of BBS would be valuable for students and teachers to find

updated information on many current governmental issues. By having the government BBS available through a commercial network, the users may discover other BBS that might be useful for their purposes.

The number of BBS being used or created has not been documented.

Because setting up a BBS can be as easy as loading the right communications software into your personal computer and plugging the phone into its back, no one is exactly sure how many of the thousands of electronic bulletin boards in America are being used by educators. The U.S. Department of Education keeps no such records, nor do the individual state offices concerned with educational technology. Some educators place the figure in the hundreds, but a grassroots movement linking schools, teachers, and students is best measured through an examination of its own roots...Seventeen states have linked district BBS into statewide networks that are accessible through either an 800 number or a local gateway that relays messages to all systems. (Watson, 1990, p. 110)

Bulletin board systems have become more diverse and flexible as more educators and students use them and develop an understanding of the technology. By communicating with other schools, businesses, or networks, teachers and students will develop an understanding of issues and ideas beyond their school building walls. Students who use this technology at home have more opportunity to communicate with others through tutoring programs,

bulletins posted by the school district, and bulletins from the teachers. The use of BBS has not been documented, however, with more schools being connected with telephone lines and modems, more schools will be able to utilize this technology. With computers being used in homes and schools allowing computers to be taken home, more students and parents will be able to access BBS and networks for their use. Education will become similar to businesses, government, and other organizations in finding useful information as more telecommunications and other computer technologies are used.

CHAPTER 3

Methodology

A questionnaire was sent to a random sample of Iowa public school districts to gather information about the use of BBS. The Iowa Educational Directory, 1992-93 was used to select the districts. Public school districts were assigned a number as they were listed in the directory and a table of random numbers was used to select one hundred districts.

The questionnaire (see Appendix) was completed by anyone who was responsible for the BBS used by the district, but they were addressed to the superintendent of the district so he/she could give it to the most appropriate person. A letter accompanied the survey explaining the research project and a self-addressed stamped envelope was included.

Each respondent was asked to include his/her name, the position he/she held and the current enrollment of the school district. The respondent was also asked which BBS were used by the district, what features or services were used, who used the BBS in the district (students, teachers, media specialists, administrators, or other personnel), how long the school had used the BBS, and how the BBS use was financed. For districts that had created a BBS, the respondents were asked what features were offered, who used the

BBS, what BBS software and hardware were used, and how the BBS was financed.

The questionnaires were returned to the researcher and were checked for completeness. A checklist was kept to note which school districts returned the questionnaires. Each questionnaire had a number to identify the district and participants were notified about the reason for this number. If all questions on the surveys were not completed, data that had been supplied were used when possible.

CHAPTER 4

Analysis of the Data

The questionnaires and letters were sent April 30, 1993, to one hundred superintendents of Iowa public schools. Eighty-one of the one hundred (81%) questionnaires were returned. Of the questionnaires returned, sixty-seven (82.7%) indicated that they did not use internal or external BBS. Fourteen (17.3%) of the respondents indicated they did use an internal or external BBS. Only these fourteen school districts provided any data for use with hypotheses two and three. Twelve different titles of BBS were listed as used by the fourteen school districts. Nine schools used one BBS, four schools used two BBS, and one school used three BBS.

Hypothesis 1 stated that "Thirty percent or more of Iowa school districts will be using a BBS." Seventeen percent of the eighty-one respondents either used an external or internal BBS. Hypothesis 1 was rejected. Two respondents listed an online information service which is usually not considered a BBS although it does have electronic mail capabilities.

Hypothesis 2 stated "For school districts which are using external bulletin board systems:" (a) "In eighty percent or more of the districts, teachers, media specialists, or administrators use the system." Every BBS listed was used by either a teacher, media

specialist, or administrator. Hypothesis 2(a) was accepted.

Hypothesis 2(b) stated "In fifty percent or more of the districts, students use the system." In thirty-five percent of the districts, students used the BBS. Hypothesis 2(b) was rejected.

Hypothesis 2(c) stated "access to databases is used in all districts, the electronic mail service is used in fifty percent of the districts and the conferencing service is used in twenty percent of the districts." Access to databases was used by fifty percent of the districts, e-mail was used by eighty percent of the districts, and conferencing was used by sixty percent of the districts. Use of access to databases was rejected, however, the use of e-mail and conferencing was accepted. Hypothesis 2(c) was rejected because all predictions were not supported by the data.

Hypothesis 2(d) stated "Fifty percent or more of the school districts will have used a system for two or more years." Seventy percent of the responding schools have used at least one BBS for two or more years. Hypothesis 2(d) was accepted. Hypothesis 2(e) stated "Costs for using the system will be paid from the districts' technology budget or the media center budget." Of the twenty BBS used, seven did not cost the school district any monies, four were supported by grants, three were funded by the district's general operating funds, two were funded from administrative budgets, and

one was supported by telecommunications account funding. Source of funding for three of the BBS was not reported. Hypothesis 2(e) was rejected.

Hypothesis 3 stated "School districts which have established an in-district bulletin board system:" (a) "Twenty-five percent or more of the districts have established a system." One of the eighty-one responses (1.2%) had established a BBS. Hypothesis 3(a) was rejected. Hypothesis 3(b) stated "All districts use the system for internal communications such as e-mail, conferencing, and district/school announcements." The school district used electronic mail, conferencing, questionnaires or polling, and district/school announcements. Hypothesis 3(b) was accepted. Hypothesis 3(c) was rejected because only school professionals were allowed access to the BBS.

CHAPTER 5

Conclusions, Recommendations, Summary

The high percentage of districts that were not using internal or external BBS may be the result of superintendents answering the questionnaires. Of the sixty-seven returned questionnaires indicating no use of BBS, forty-seven were answered by superintendents. The superintendents may not have forwarded the letter, questionnaire, and enclosed envelope to another professional in their district who may have been more aware of the use of BBS. Of the districts using BBS, eight of the persons responding were not superintendents and six were superintendents.

The high percentage of no use of BBS in Iowa public schools may also be a result of superintendents, principals, and other educators not being aware of the term "electronic bulletin board." BBS are also referred to as computer bulletin boards or are used simultaneously with the word networks. With so many different computer terms being used in technology, many non-computer users misuse or misinterpret words and phrases. For example, DIALOG (online information utility) and Columbia (administrative and library automation program) were listed as a BBS being used on three questionnaires by school districts.

School districts may take advantage of BBS if they are made

available through grants or if it does not cost any money for the school to use the service. National, state, or local education agencies may be able to create BBS for their respective audiences to facilitate more communications between schools and educators. In Iowa, Area Education Agencies could be logical creators of BBS for the school districts in their region. Various features could be used and all persons in education and/or communities could use them. Commercial BBS can be used by schools, but usually require a subscription fee and the cost of the phone call. Possibly in the future costs may decrease, use of toll-free calls may be available, or Internet use may be available through the Iowa Communications Network.

Iowa public school districts are using external BBS when they are accessible at no cost or through grants and are useful for school personnel. Although an accurate assessment is difficult when a small sample is used and technology experts do not answer questionnaires, it can be assumed that many school districts do not use this form of telecommunications due to lack of monies and understanding of this form of communication. Only one school district indicated they presently had an internal BBS for professional staff use only. Another school district had established an internal BBS for use by school personnel and the community from

1984-88. Many schools may not attempt the establishment of their own BBS due to time and budget requirements. Of the school districts indicating the use of BBS, many had started their use in 1991 or 1992. With more awareness and instruction in BBS, more schools may begin using BBS for their professional and academic needs.

Results of this survey represent a growing need for technology awareness and education in telecommunications. The primary concern for schools is the expense of phone bills to external BBS and the personnel to run an internal BBS. With the introduction of Internet and the Iowa Communications Network, BBS will become more accessible to schools and more relevant to educators. Once educators and students are introduced and trained to use BBS, the BBS will be seen as a valuable source for information.

This study was performed to learn if Iowa public schools were using internal or external BBS. Public school districts were assigned a number in the Iowa Educational Directory, 1992-93, then using a random table, one hundred school districts were chosen. A letter, a questionnaire, and a self-addressed, stamped envelope were addressed to the superintendent asking him/her to forward the items to someone in their district who was knowledgeable about BBS. The letter, questionnaire, and envelope were sent April 30,

1993, and the recipients were asked to return the questionnaire to the researcher by May 14, 1993. Of the questionnaires returned, sixty-seven (82.7%) indicated that they did not use internal or external BBS. Fourteen (17.3%) of the respondents indicated they did use an internal or external BBS.

Teachers, media specialists, guidance counselors, administrators, and students used the varied BBS. Teachers were the most common users. Electronic mail, conferencing/chat, and database access were all being used by the school districts. BBS have been used since 1987 by school districts and by 1991, the fourteen positively responding school districts have used at least one BBS.

Many of the BBS used required no budgets. Ones that required financing were provided through grants, general funds, administration budget, or telecommunications budget. Three schools did not provide financial information. One internal BBS was established and maintained in an Iowa public school district. It was used by teachers, media specialists, guidance counselors, and administrators. It was used for electronic mail and messages for the school personnel. One school district used TOPS for the software, a local area network file server program, which was used on a Macintosh and IBM network.

Seventeen percent of eighty-one respondents either used an external or internal BBS. Every BBS listed was used by either a teacher, media specialist, or administrator. In thirty-five percent of the respondent schools, students used the BBS. Access to databases was used by fifty percent of the districts, electronic mail was used by eighty percent of the districts, and conferencing was used by sixty percent of the districts. Seventy percent of the schools have used at least one BBS for two or more years. One of the eighty-one respondent districts (1.2%) had established a BBS. The school district used electronic mail, conferencing, questionnaires or polling, and district/school announcements. Only professional school personnel were allowed access to the internal BBS.

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Appendix

April 30, 1993

Carl Johnson, Superintendent
123 Lincoln
General City, IA 50000

Dear Mr. Johnson,

I am a graduate student at the University of Northern Iowa completing my Master of Arts degree in Library Science. For my research requirements, I am conducting a research study about electronic bulletin board systems used and/or established by Iowa public school districts.

The enclosed questionnaire should be completed by someone in the district who is knowledgeable about the use of this technology. If the school district has established an electronic bulletin board system, the SysOp, or the person who maintains the bulletin board system, should complete the questionnaire. Please forward this letter, the questionnaire, and enclosed envelope to this person.

Each questionnaire has a numerical code for identification of the school district responding. All school district names will be confidential and none will be identified in the data analysis or conclusions. A directory of school districts using electronic bulletin boards will be compiled. If you wish your school district to be listed in this directory, please complete the permission form at the end of the questionnaire.

Any questions can be sent to the address given below.

Thank-you for your participation. Please return this questionnaire by May 14, 1993.

Sincerely,

Sylvia Stearns
Box 164
Milo, IA 50166

Electronic Bulletin Board System Questionnaire

Student enrollment (September, 1992-93): _____

Name and position of person completing: _____

Please answer the following questions.

1. Does the school district subscribe to/use external electronic bulletin board systems? yes no

2. Has the school district established its own electronic bulletin board system? yes no

If answer to both #1 and #2 is no, stop here and return questionnaire in enclosed envelope.

3. If your district subscribes to or uses an external bulletin board system(s), please fill in/check the following.

A. Name of BBS _____ year began using _____

What features are used?

(Check all that apply.)

- Electronic mail
- Conferencing/chat
- Access to databases
- Access to computer software
- Other (please specify)

Who uses the BBS?

(Check all that apply.)

- Classroom teachers
- Media specialists
- Administrators
- Students
- Other (please specify)

Budget category(ies) used for charges, if any _____

B. Name of BBS _____ year began using? _____

What features are used?

(Check all that apply.)

- Electronic mail
- Conferencing/chat
- Access to databases
- Questionnaire or polling
- Access to computer software
- Other (please specify)

Who uses the BBS?

(Check all that apply.)

- Classroom teachers
- Media specialists
- Guidance counselors
- Administrators
- Students
- Other (please specify)

Budget category(ies) used for charges, if any _____

If more than two systems are used, please supply the above information for each system on a separate sheet.

OVER PLEASE

4. If your school district has established its own BBS, please answer the following questions.

What is the main purpose/use of the BBS? _____

What features does it offer?

(Check all that apply.)

Electronic mail

Conferencing/chat

Access of databases

Questionnaires or polling

District/school announcements

Other (please specify)

Who uses the BBS?

(Check all that apply.)

Classroom teachers

Media specialists

Guidance counselors

Administrators

Parents/community members

Other (please specify)

How is the established BBS being financed? _____

What BBS software and hardware are used? _____

Permission is granted to include the following information in a directory of districts using an electronic bulletin board system(s).

District name _____

Address _____

Name(s) of external BBS used _____

Name and telephone number of in-district BBS (if any) _____

Signature _____

Title _____

Please return in enclosed self-addressed, stamped envelope.

Return address: Sylvia Stearns, Box 164, Milo, IA 50166