

1989

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Recommended Citation

Gerlovich, Jack A. (1989) "A National Computer Conferencing Network for Science Education," *Iowa Science Teachers Journal*: Vol. 26 : No. 1 , Article 4.

Available at: <https://scholarworks.uni.edu/istj/vol26/iss1/4>

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A NATIONAL COMPUTER CONFERENCING NETWORK FOR SCIENCE EDUCATION

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Introducing PSInet

If science educators -- curriculum planners, supervisors and teachers -- were linked by telecommunications networks, all could experience the advantages of a conference without the usual disadvantages, such as travel costs or loss of valuable work hours. And these experiences could be frequent, regular and on-going.

Motivated by such possibilities, the Council of State Science Supervisors began setting up a national telecommunications network for science education in 1986. Support for the idea came in the form of a grant from the National Science Foundation, the cooperation of state and federal government agencies and equipment and technical aid from the IBM Corporation.

PSInet (People Sharing Information - network) is a national computer conferencing network for science and mathematics education based in Iowa. By the end of 1991, educators worldwide should be able to communicate and exchange information on a regular, cost-effective basis through PSInet.

Computer conferencing with PSInet is like attending an actual conference, in that the conference structure is a forum for exchange of ideas and the development of information about a given subject. Within conferences are sessions which enable users to choose specific participants.

However, unlike "live" conferences, PSInet allows participants to partake at their own convenience in one or several conferences across the state or nation. The system differs from other computer bulletin boards in that all telephone communications are processed at one time, without user involvement. This is sometimes referred to as "batch processing."

Among the conferences currently included in PSInet are the following:

- Curriculum - Offers materials and guides from across the United States
- Projects - Offers: AAS Project 2061
Presidential Awards Winners
Invent America

Search for Excellence in Science Education
Title II
Safety
Legal
Triangle Coalition

- Intrastates - Offers communications among the eight pilot states
- Calendar - Cites events of local, state, regional and national organizations
- NSF - Offers all NSF Institute announcements
- Olympiad - Offers information concerning this national project
- ASSM - Offers communications channels among state, regional and local mathematics personnel
- PSInet - Addresses technical questions concerning the use of the system
- CSSS Activ. - Limited to state science supervisor activities

PSInet uses a dedicated personal computer called a "server" to control communications among users' personal computers, referred to as "workstations." The server is analogous to a city where conferences are held. Just as several conferences may be held in a city at one time, multiple conferences can be handled by a single server.

The system enables participants to perform the following tasks:

1. Join conference sessions to receive papers sent by others.
2. Submit papers to conference sessions for others to read.
3. Begin conferences and sessions to initiate dialogue concerning new topics.
4. Participate in conferences outside of PSInet.
5. Learn about other PSInet users by reading their abstracts.
6. Send private messages to one or more users.
7. Use built-in ASCII text editor or other ASCII editors to create and edit papers and messages.
8. Create on-line forms to send as papers or messages for others to fill out and return.
9. Edit and re-send documents.
10. Save up network tasks and accomplish them all in a single telephone call.
11. Set computer to automatically dial the network at any selected time.
12. Store papers and messages on workstations in a personal data base automatically created.
13. Search for documents in the data base by session, author, date or keywords.
14. Print all or only selected entries in a list of documents, or print the list itself.
15. Copy one or more messages or papers to DOS files for use with other programs.

16. Use PSInet to send any kind of file as a paper or message, whether it is a file containing a program, data or graphics.

A Three Phase Plan

The network is not expected to be complete until 1991. However, Phase I of three phases is now in place. In 1987-88, all state departments of education and select national organizations and federal offices formed the skeleton of PSInet. In addition, eight pilot states have been established to explore expansion of PSInet within states. These intrastate networks will expand PSInet to include all interested colleges and universities, area education agencies, state offices, academies of science, museums and local schools interested in linking into the network. The pilot states are California, Montana, Minnesota, North Carolina, Florida, Arizona, New York and Iowa.

The *Iowa Science Teachers Journal* is a PSInet user. Manuscripts may be submitted via PSInet.

During Phase II (1989-90), the intrastate models listed in Phase I will be expanded to include 20 additional states, additional federal and national science and mathematics agencies, interested U.S. territories and foreign countries. In addition, the inclusion of commercial vendors within commercial conferences will be explored. Participants not interested in receiving information on commercial projects simply need not join that conference.

During Phase III (1990-91), the intrastate models would be expanded to include the remaining 24 states, additional federal and national offices, foreign countries and commercial vendors. The data bases would also be expanded dramatically. Satellite communications and more rapid transmission of large quantities of information would be explored.

Joining PSInet and IAnet

Plans for the intrastate expansions mentioned above call for establishing 50 pilot sites representing all levels of education as well as geographic diversity within the respective states. The workstation software and accompanying documentation will be provided free to these pilot sites. Beyond the 50, purchase of the software through IBM would be required. The educational discount price for the workstation software is \$80.

Joining PSInet and IAnet requires:

IBM PS/2 Model 25, 30, 50, 60, 70 or 80 (with 512K of RAM and a hard disk drive with 20 MB minimum)

Hayes compatible modem (capable of running the Hayes command set)

PSInet software and documentation

Telephone numbers for PSInet and IAnet (secured from Jack Gerlovich, National Director for PSInet and IAnet System Operator [SYSOP]; call 515-281-3249)

Password (developed by participant and communicated to SYSOP)

Joining IAnet automatically provides participants with national information on PSInet as desired.

There are *no user fees* for participation in PSInet or IAnet. The only participant costs involved in use of these networks are the telephone charges for calls to the nearest server (currently Des Moines). Since calls can be automated to be made when telephone rates are lowest, costs can be reduced even further. As regional servers become established in area education agencies, colleges, universities and local districts, costs for calls from rural areas will drop additionally. This situation is anticipated over the next two years. Since this computer network is an "intelligent system" enabling off-line searches of data bases, file manipulations and messaging commands, telephone calls seldom exceed five minutes.

PSInet is the most exciting concept to affect science and mathematics education in recent years. It is rapidly becoming *the* most cost-effective source of information for science and mathematics education. In addition, it is evolving into *the* center for science and mathematics education communication and personnel exchanges.

Subject Bibliography

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