APICNET: A Japanese Initiative to Create a Global Classroom on the Internet

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Abstract

APICNET is an Internet-connected PC network. The majority of its users are school teachers in Japan. APICNET's aim is to provide an environment accessible from the classroom to conduct online projects which promote education for international understanding. The educational effects that we ultimately expect to see in the participating students are that they become interested in global issues and regard them as their own problems to tackle. The virtual global classroom that we aim to develop on the Internet will be the place where students begin to think this way.

1. About APICNET

APICNET (Asia Pacific Interactive Communication NETwork) is a personal computer network for international cooperation, international cultural exchange and education for international understanding. It is sponsored by the Association for Promotion of International Cooperation (APIC), an organization affiliated with the Ministry of Foreign Affairs. Global Commons, Inc. has served as the operating organization of the network.

The network was established in January of 1991. It acquired a UUCP connection to the Internet in November of 1992, and moved to a 64Kbps IP connection in July of 1994. The majority of APICNET's users are 6-3-3 school teachers in Japan (6-3-3 refers to Japan's educational system--6 years for elementary, 3 years for junior high, and 3 years for senior high school). In order to communicate with users of other networks or to access various Internet resources, APICNET users access the host computer in Tokyo via direct dialup connection or through packet switching networks. Currently, the services supported by APICNET are E-mail, telnet, gopher, WAIS, WWW (Lynx), finger and whois.

2. Online Educational Projects

APICNET's aim is not to be simply a BBS that provides a space for communication, but rather an environment accessible from the classroom to conduct online projects which promote education for international understanding. After APICNET's inception, a cooperation setup with other educational networks around the world was put into place. This made it possible for schools in Japan to participate in projects planned by educators in other countries, and also made it possible for APICNET to devise its own projects and invite participation from schools overseas.

The Internet is a valuable educational resource that makes the creation of a "global classroom" truly possible. Below are some examples of the APICNET's initiatives as well as collaboration examples with other educational networks.

2.1 Electronic Sister School Project

The most introductory project APICNET offers is the Electronic Sister School Project. Schools in Japan are matched with schools overseas in an attempt to provide a means for them to communicate with each other on a daily basis. The actual content of their exchange is up to the schools themselves, and they range from simple penpal exchanges to highly creative projects. Two such projects is described below.

2.1.1 Rinkan Elementary School

Second grade students in Rinkan Elementary School in Yamato, Kanagawa Prefecture, collaborated with students in Lakeview Elementary School in Nebraska to make a picture book. The Japanese students thought up the first half of the stories and E-mailed them to the American students, who completed them. Students in both countries rounded out the stories by drawing pictures which were exchanged via fax. In all, seven stories were created, the titles of which include "Pet Kangaroo," "The Magical Blue Whale," and "Penguin Adventure."

2.1.2 Amagasaki Minami High School

In order to motivate their students to study English, Amagasaki Minami High School in Hyogo Prefecture introduced E-mail into the curriculum in December 1992. They exchanged mail in both English and Japanese with students in Killara High School in Australia and a college of chemistry on the outskirts of Moscow. A handicapped student was among those involved in the project, and E-mail proved to be an effective way for him to share his ambitions and abilities with others. In the virtual community of the Internet, peoples' worth is determined by the content of their written messages; nationality, age and social status have no relevance. Through the experience of being judged solely on their opinions and not by their physical handicaps, E-mail can help students who are physically challenged develop self-confidence, which in turn can bring out previously hidden abilities.

2.2 "What's Japan? & What's America?" Project

The Electronic Sister School Project is a rather basic and easy to set up project, but in most cases the relationships tend to die out due to a lack of potential for supporting continued levels of student motivation. For schools in which the novelty of exchanging E-mail internationally has worn off, the recommended next step is to participate in a project with a well-defined, specific goal.

Our yearly "What's Japan? & What's America?" program is such a project. In September 1993, five high schools in Japan and five in the US started off the project by sharing their responses to a questionnaire created to expose the perception gap that exists between Japanese and Americans. Activities during the rest of the half year-long project included exchanging self-introductions, exchanging questionnaires, Q & A sessions, and discussions on bilateral affairs and global problems. The program culminated with the creation of a "Joint Declaration of American and Japanese High Schools' Global Partnership," consisting of problems which the participants believed should be solved through Japanese-American cooperation. The topics of the declaration included AIDS, handgun laws, Japan's rice problem, world peace, and human rights. In addition to copies of the declaration being sent to the local media of each of the schools, the declaration was also sent to President Clinton via E-mail and to Japanese Prime Minister Hosokawa via snail mail.

2.3 GeoTouch Project

2.3.1 Background

A number of environmental issues are adversely affecting the earth with disregard to man-made boarders. One way to come up with solutions to global environmental problems is to provide an opportunity for concerned citizens everywhere to work together to solve their local problem on a global scale. Telecommunication networks, which have become like a giant blanket covering the earth, provide a perfect medium for discussing these problems, devising possible solutions and to act on these solutions.

To commemorate Earth Day on April 22, 1995, APICNET launched a worldwide environmental project called "GeoTouch" (Global Ecosphere Observation through Teamwork Of Universal CHildren).

The project is designed to have students actually "touch" their local community and to recognize it as part of the entire planet. In this program, students will be able to develop a deeper understanding of global environmental problems by "thinking locally" about sources of environmental problems that affect our daily lives. By using telecommunication networks, students will be able to expand their point of view to take into account how other regions, no matter how close or far away, may also be adversely affected by similar issues.

2.3.2 Objectives

- To enhance environmental awareness worldwide
- To introduce students to international cooperation as a meaningful and valuable method of problem-solving
- To have students adapt a global perspective when solving local problems
- To provide students with opportunity to acquire

basic skills in using Internet resources such as E-mail, gopher, telnet and WWW

2.3.3 Project Time Line

Schools may participate in the project from start to finish or they may choose to participate in only the activities their schedules will allow.

- 1st Session: April 22, 1995 to June 22, 1995 (or end of local school term)
- 2nd Session: Starting date: September 18, 1995 (Optional)

Schools will be separated into discussion groups based on environmental problems.

2.3.4 Age Level

6 to 18 years old

2.3.5 Project Contents

1) Welcome Party

In place of a real-life opening banquet, we will use APICNET's chat room (telnet://chat.apic.or.jp) to give the participants a chance to meet online in real time. We will schedule multiple chat sessions to accommodate participants in various five zones.

2) Research Local Environment (Questionnaires)

Participants will do research to answer the following questions. The results will be made available in APICNET's gopher.

Q. What kind of region do we live in?
- characteristics of our region

Q. What kinds of environmental problems are found in our region?
- specific examples of environmental problems
- measures currently being taken to solve these problems
- What can be done at the local level?
- What can be done in school?
- What can be done at home?
- What can *I* do?

In the beginning of May, schools will be separated into discussion groups based on age and common regional characteristics.

3) Making an action plan for the environment

Groups will exchange ideas and discuss what they can do for the environment.

- What are the similarities and differences between the environmental problems of each region?
- Do you think that current local measures to help the environment are effective or do they need to be changed?
- How can we contribute to solving local/global environmental problems?

There will be a question and answer session led by an expert in environmental science.

4) Cleaning up your community and the world!

All participating schools will clean up their own community based on their group's action plan. We would like each school will take some photos to be displayed in APICNET's GeoTouch web site.

5) Reporting your activities.

- What have you done for the environment?
- What have you learned through your experience?
- What should everyone to help their communities?
- What should everyone to help the world?

6) Releasing an Environmental Declaration

At the end of the program, the participants who would like to take the project further will collaborate on an environmental declaration summarizing the results of their discussions and their experiences in this project or previous online environmental projects. This declaration will be delivered to city halls, federal government agencies, the United Nations, the media, and will also be made available via WWW and gopher.

2.4 Collaboration with Other Educational Networks

Collaboration between educational networks in various countries is an important factor in making the global classroom a success. APICNET is currently serving as a way for schools in Japan to participate in educational projects coordinated by educational networks in other countries.

2.4.1 Japan-New Zealand Tanabata Project with Telecom New Zealand

Last July, APICNET joined with Telecom New Zealand to sponsor the "Japan-New Zealand Tanabata Project." In this project, students in both countries worked with each other to compare the legends related to the Japanese festival of Tanabata to the traditional beliefs of the Maori people of New Zealand.

2.4.2 Forest Project with Finland

In September, the Forest Project was developed to commemorate Forest Day in Finland. Participants exchanged information on forests and the environment. An organization in Finland coordinated the project to invite students from all over the world, and participation from Japan was through APICNET.

2.4.3 Foreign Language Mutual Teaching Project with Leeds Univ.

Leeds University in London developed an ongoing project for their Japanese language seminar in which college students studying Japanese are paired with APICNET members who are learning English. This project provides the participants with the opportunity to help each other with their foreign language studies.

3. The Future of APICNET

Until now, the international educational projects in which APICNET has been involved have been based on E-mail exchanges. As more and more schools in Japan gain access to IP connections, it is necessary to begin planning and conducting projects that take advantage of multimedia-based network technologies.

Below are some ideas we have in mind for the future of APICNET.

3.1 Technology to Create Virtual Global Classroom

3.1.1 Multimedia-based E-mail

In the "What's Japan? & What's America?" Project, we used video letters to complement text-based E-mail communication, assuming that they would be replaced by some kind of video transmission function of the Internet in the near future. Since it was not feasible for the participating schools to exchange video messages using the current Internet technology, we had them send videotaped letters to each other via regular mail. Despite the low-tech approach, the project evaluation shows that the video letters had a big impact on the students.

Since communication by text-based E-mail limits the kind of information that can be transmitted, it is very hard to have the students get the feeling of visiting each others' classrooms.

Sending multimedia files by E-mail is recently becoming popular on the Internet. This has been made possible by a standard called "MIME (Multipurpose Internet Mail Extensions)," which enables users to transmit still pictures, voice data, etc.

We assume that in the near future, video information will be exchanged asynchronously by E-mail. Although the above mentioned MIME includes video transmission along with the audio information, we have to wait for the future expansion of the Information Highway as well as the further development of video compression technology in order to be able to use it on a daily basis.

3.1.2 Video Conferencing

A video conferencing application called "CU-SeeMe" is now available on the Internet, and some examples of real-time video conferencing using the software have been reported.

We have had opportunities to use the slow-scan video system such as "Luma-phone" in some educational projects, and we know real time communication has a profound impact on the students involved.

The mixed use of asynchronous communication means such as E-mail and synchronous means such as CU-SeeMe would make APICNET's educational projects more effective.

3.1.3 Information Servers

Few schools currently have their own Internet servers, but such schools will hopefully increase in the coming years. Setting up information servers like Gopher, WAIS (Wide Area Information Server), WWW (World-Wide Web) at schools to publish their information for the rest of the world might be feasible in the near future.APICNET Secretariat itself has started its WWW information server called "APICNET-Web" (http://www.apic.or.jp/) which contains APICNET activities information. We are now planning to include APICNET member schools' home pages on our web until the schools can set up their own web servers.

3.1.4 Support for Schools IP-connections

In the long run, it will be necessary for the schools involved to be linked by leased lines in order to take advantage of full IP connectivity. Therefore, we should improve the networking environment of all schools involved as well as that of the program providers' networks,such as APICNET in Japan, and the educational networks in other countries.

To support this movement, we announced one Internet connectivity package for school on April 5, 1995. This package was developed by three companies, AT&T JENS, Uchida Yoko Co., Ltd. and Global Commons, Inc. The package includes (1) Internet connectivity services (IP and UUCP) provided by AT&T JENS at special school rates, (2) Internet servers installation and integration with the existing school LAN's by Uchida Yoko Co., Ltd.,and (3) Online educational projects coordinated and supported by Global Commons, Inc. Introducing the Internet to schools is not an easy task however, and we hope to overcome the barriers by utilizing this full turn-key approach.

3.2 New Education Setup for Global Collaboration

Computer literacy education has been promoted recently in Japan. Although the application we are developing is based on the use of PCs, its goal is not to teach how a computer works, nor is it for using computer-aided instruction (CAI) software, but rather to utilize PCs as a media for presentation, communication and collaboration between students. PCs connected to the Internet have a great potential to change the educational environment since they can function as windows that connect the classrooms with the outer world.

The need for international cooperation at various levels is increasing. As countries develop closer relationships with each other, the more necessary it becomes for people to understand and cooperate with each other. Without this, we would see conflicts in every corner of the world. In addition to these conflicts, we should never forget that we are now challenged by global problems such as environmental issues, which cannot be solved by one single country. Thus the need for global collaboration is pressing and here we see the need for everyone to acquire the ability to tackle these kinds of problems together. We need to develop educational applications for training for global collaboration.

4. Making It Happen

The educational effects that we ultimately expect to see in the students who participate are that they become interested in global issues and regard them as their own responsibility to solve. Normally we would feel helpless when faced with global problems because they are too huge for a small individual to try to solve alone. However, students who use the Internet may change their way of thinking by understanding its networking power.We often use such an expressions as the world might become such-and-such a place in the future. But we hope that our children say that they will make the world such-and-such a place in the future. A virtual global classroom that we are aiming to develop on the Internet will the place to realize to have students think that way.

Author Information

Toshi Tsubo is the president of Global Commons, Inc., an Internet research and consulting firm. He and Yoko Kaneko, Director of GC, have been involved in the APICNET Project since its feasibility study in 1989. Mikiko Sekiguchi and Richard Pavonarius are coordinators for APICNET. Mikiko is now promoting the "GeoTouch" Project to make it really a global project. Richard played an important role in bringing "APICNET-Web" into existence. Toshifumi Matsumoto is the Senior Deputy General Manager of the Internet Department in AT&T Jens Corporation. AT&T Jens' InterSpin Service is the APICNET's connecting point to the Internet. Mr. Matsumoto recognizes the importance of Internet use in

education and is supporting APICNET activities in various ways.