POSTSECONDARY EDUCATIONAL NETWORK INTERNATIONAL AT TIANJIN CHINA

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ABSTRACT

The Nippon Foundation of Japan is partnering with NTID/RIT and Japan's Tsukuba College of Technology (TCT) to establish a worldwide university network serving deaf students, entitled the Postsecondary Education Network International (PEN-International). PEN-International is funded by a grant from the Nippon Foundation of Japan to NTID. This is a multi-year partnership to technologically link universities around the world that serve deaf and hard-of-hearing people. PEN-International will help universities apply state-of-the-art instructional technologies, improve and update their technical curriculum, and update their computer hardware and software for instruction. PEN-International will assist participating countries with faculty training; development of instructional products; and application of the worldwide web, information technology, and distance learning technologies to teaching and learning. This paper reports on the successes of the PEN-International's collaboration with Tianjin Technical College for the Deaf of Tinajin University of Technology, China.

1. Overview of PEN-International

In a first-of-its-kind effort to significantly improve education and career opportunities for the world's 6 million deaf and hard-of-hearing people, The Nippon Foundation of Japan has partnered with the National Technical Institute for the Deaf (NTID) at Rochester Institute of Technology (RIT) and Japan's Tsukuba College of Technology (TCT) to establish a worldwide university network (Postsecondary Educational Network – International, 2002).

PEN-International is being undertaken to help universities apply state-of-the-art instructional technologies, improve and update their technical curriculum, and update their computer hardware and software for instruction. NTID and TCT will use their collective expertise in deaf education and technology to assist participating countries with faculty training, development of instructional products, and application of the worldwide web, information technology and distance learning technologies to teaching and learning. NTID and TCT faculty will be teaching various information technologies and operating systems, as well as various multimedia and off-the-shelf software packages. In addition, student and faculty exchanges and joint ventures with information technology industries will be implemented.

The long-term goals of the project are twofold: to equip deaf residents of participant countries with the skills needed to compete in a high technology workplace, and to prepare universities to share the knowledge and instructional products they develop with other colleges.

PEN-International will enhance local capability and global networking at each participant institution. Participants will be moved from importers of 'know how' to self-sufficiency. As the project progresses, each institution will develop the capability to export what has been learned through the project to other programs serving people who are deaf.

Over the five-year life of the project, PEN-International will work in as many as 8 different countries, with Tianjin College for the Deaf of Tianjin University of Technology (China) being the first, and the Center for the Deaf at Bauman Moscow State Technical University (Russia) to follow.

1.1 Project Goals

- Increase the application of information technology and instructional technology to teaching and learning;
- Improve teaching, learning, curriculum development and instructional development;

- Expand career education opportunities for deaf and hard-of-hearing people internationally; and,

- Increase access by people who are deaf to technology and employment in the information technology industry.

1.2. Primary Objective

Implement and expand a cooperative network of educational institutions providing postsecondary education to students who are deaf and hard of hearing using innovative information and instructional technologies, and faculty training and development.

1.2.1 Enabling Objectives

Stage One: Construct and test the infrastructure for an international postsecondary education network using three of NTID's four sister institutions: (1) Tianjin Technical College for the Deaf of Tianjin University of Technology (China-1998); (2) Moscow State Technical University Program for the Deaf (Russia-1994); and, (3) Tsukuba College of Technology (Japan-1992). The infrastructure will be comprised of the WWW portal to the project, multi-media laboratories/classrooms at each institution, local area networks, and the international telecommunications networking needed to connect all of the participant institutions.

Stage Two: Expand the international network to include other programs in both developing and developed nations that are ready to join the network, with special consideration to programs in the Pacific Basin.

1.2.3. Long-term Objective

- Influence attitudes, practices and policies in the information technology industry so that people who are deaf are not blocked from access to technology or employment in the industry.

1.3. Target Group

The beneficiaries of the project will be deaf and hard-of-hearing people in participant countries. This will be achieved through improvement of instruction at postsecondary educational institutions.

1.4. Background

Internationally, there are a limited number of postsecondary education programs for people who are deaf or hard of hearing but more countries are developing programs and services. In Japan, it was not until 1990 that Tsukuba College of Technology for

deaf and visually impaired people opened its doors. The college, which was modeled after NTID, was the first of its kind in all of Asia and has proven in a very short period of time to be a leader in the technical education of people who are deaf.

1.5. Overall Strategy for Implementing PEN-International

NTID has developed four (4) sister institution relationships with colleges and universities internationally in an effort to improve the circumstances of deaf and hard-of-hearing people in technical and professional education.

These sister institutions will serve as the core of an international postsecondary educational network. This project will enable that network and will be executed in two phases. Therefore, a two-stage program that builds and expands upon relationships in various parts of the globe will be undertaken. The two stages will overlap since certain activities in each stage will occur simultaneously.

In stage one, current relationships will be developed into an international network. NTID and TCT will form a development team as soon as the project commences. The development team will be led by the NTID project coordinator and will be comprised of a minimum of two individuals from each participant institution. Members of the team will be selected by each participant institution on the basis of their instructional technology experience, demonstrated leadership skills within their home institution, and recognition as excellent teachers. In effect, the team will be comprised of key individuals from each of the participant institutions. This team will help design the international postsecondary network and will help assure that the project meets the needs of participating institutions. The intention is to assure collaboration, where each participant institution has a hand in the network design.

Further, TCT and NTID will provide training for faculty members at participant institutions. Both NTID and TCT together have more than 40 years of experience applying information and instructional technology to the education of deaf students. This knowledge will be transferred to participant institutions by the training of faculty at these institutions. In addition, following initial training, NTID and TCT will provide technical assistance as those faculty implement what they have learned. Further, the project will train individuals at each institution to serve as local experts in applying, trouble shooting and evaluating the instructional and the technology components of the project. TCT and NTID faculty will also facilitate instructional technology transfer. For example, NTID and TCT have developed and or adapted curriculum and instructional solutions that could be modified to reflect the needs of the partner institutions. These solutions will be transferred to participant institutions. NTID and TCT will provide such technology transfer via faculty who are schooled and experienced in the use of information and instructional technology for deaf. Finally, NTID will provide training to network participant faculty in the psychology of teaching and learning for deaf students.

The development team will play a major role here as well. The team will participate in the establishment of minimum standards for faculty skill development and technology transfer.

As a first step in stage two, project staff will conduct an assessment of the capabilities of selected countries that have a well established secondary education system for deaf students in the Pacific Basin (other than NTID's sister institutions) to participate in the network. Stage two of the project will see the expansion of the network. In stage two, the network will be expanded to include other developing countries (to be determined) and developed countries as well (to be determined). Since there are limited opportunities for postsecondary education for deaf people in many parts of the world, stage two may see the addition of one or more postsecondary programs that exist but are in need of assistance in solidifying their programming for deaf and hard-of-hearing students.

Throughout the project, NTID and TCT will provide technical assistance and facilitate instructional technology transfer in situ, and through distance learning technologies. In addition, selected and highly competent faculty from the participant institutions will provide technical assistance in areas in which they possess special expertise.

Finally, during both stage one and stage two, international exchanges of students will be fostered. These exchanges will serve to expose the student participants to the culture of the other countries. The exchanges will also serve to provide students with an introduction to the information technologies used in participant countries. Because of the globalization of the world economy, an international exchange of students is considered one of the best ways for participant institutions to expose their students to the realities of the world they will face after graduation. Concomitantly, the exchanges will improve the quality of education at each participant institution by broadening and expanding the scope of experiences offered to students. The underlying philosophy of the exchanges will be as follows: to strengthen each participant's cultural and personal identity while simultaneously helping them develop an understanding of the diverse cultures that effect the global marketplace.

2. Tianjin Technical College for the Deaf of Tianjin University of Technology Tianjin, China

Tianjin Technical College for the Deaf of Tianjin University of Technology was the first international partner to join PEN-International. On 23 March 2001, a memorandum of understanding (MOU) was signed in Tianjin, China by James J. DeCaro, director of PEN-International at NTID, and Guodong Bao, director of Tianjin Technical College for the Deaf of Tianjin University of technology. The document detailed the roles and responsibilities of NTID and TUT and also details the goals and sentinel events for PEN-International.

Among other things, the MOU identified two major tasks; 1.) the creation of a professional faculty development model and training plan for TUT faculty, and 2.) the planning and construction of an instructional multimedia computer lab at TUT.

2.2 Faculty Development

Prior to developing training materials for faculty from Tianjin Technical College for the Deaf of Tianjin University of Technology, a needs assessment was conducted to determine what skill sets the faculty and administration at TUT considered essential in order to achieve the first year goals of PEN-International. This needs assessment was conducted between 1 March and 30 April 2001 and resulted in the selection of three areas for attention:

- Networking and ISDN skills;
- Teaching and learning strategies for deaf education;
- WWW site design to support classroom instruction.

NTID faculty skilled with related expertise were selected to develop materials addressing each of the three areas detailed above. These materials were developed in English and translated into Chinese. Selected materials were sent to faculty at TUT as pre-reading for the training that occurred at NTID the week of 25 June 2001.

2.2.1. Preliminary Training in the USA

Seven TUT faculty members participated in the Instructional Technology and Education of the Deaf, Supporting Learners, K — College, An International Symposium, held at NTID, June 2001 (National Technical Institute for the Deaf, 2001). The symposium was a gathering of 218 educators, administrators and technology experts from across the USA and around the world. The symposium focused upon the instructional application of technology in teaching people who are deaf. The faculty from Tianjin participated in selected sessions that addressed the three areas delineated above. The symposium provided the TUT faculty with a survey of best practices and procedures in the use of technology with deaf students.

In addition to attending symposium sessions, the TUT faculty attended special lunchtime seminars that were organized by PEN-International. These seminars consisted of discussions with NTID's very best and brightest faculty members regarding the use of educational technology to teach students who are deaf.

Since the official language of the conference was English, PEN-International hired seven Chinese nationals who are graduate students in the RIT information technology program. These students shadowed the seven faculty members from TUT

and served as their translators and interpreters during the conference and the lunchtime seminars.

An overall evaluation of the level of satisfaction of the TUT faculty members as regards the symposium was conducted. These data show a very high level of satisfaction with the symposium. Overall the symposium experiences for the seven faculty members from Tianjin were very successful. (DeCaro, 2001)

On 28 and 29 June, the seven faculty members were divided into two teams: a team of two and a team of five. The team of two consisted of faculty members responsible for networking and ISDN, and the team of five was comprised of instructional faculty. These two teams engaged in training that was tailored to their particular needs.

An evaluation of the usefulness and success of the training sessions was conducted in September, two month after the training. These evaluation data were collected in September after the faculty returned home and had an opportunity to reflect upon the utility of the training once they started to apply the skills they learned at NTID (DeCaro, 2001). Clearly, the TUT faculty members consider the training they received at NTID to be relevant, and of high quality and utility.

2.2.2. Training at TUT

In September 2001, prior to the TUT Multimedia Computer Lab opening, two individuals from NTID conducted follow-up training and consultation with faculty at TUT. The training focused upon lab networking and difficulties encountered by the faculty members using the WWW to support instruction in the new lab. All seven of the faculty trained at NTID participated in the sessions, as did 7 faculty members who had yet to be trained but who are using the new lab for their classes.

In an area previously not addressed by PEN-International, TUT identified the need to have their faculty trained regarding the application of educational Audiology in making appropriate instructional decisions for students who are deaf. To address this need, Dr. N. Ohnuma of TCT, developed a series of Audiology seminars/workshops and offered these at TUT from 19 to 26 August of 2001. Forty faculty members attended the seminars. Twenty were from the college for the deaf at TUT and 20 were from schools for the deaf in Tianjin. Professor Suto of Tsukuba College for the Deaf assisted Dean Ohnuma in the presentation of the seminars/workshops. As a part of the training activities, Dean Ohnuma presented TUT with 20 hearing aids, a sound level meter, 6 stethoscopes and 200 hearing aid batteries as a donation from Tsukuba College of Technology.

2.3 TUT Multimedia Computer Lab

The faculty and administration at TUT, through a careful assessment of local needs, determined that a Multimedia Computer Lab should be constructed during he first year of the project. TUT was able to secure a large classroom to house the new lab within the main building serving deaf students. The Multimedia Computer Lab was designed to serve as both a "smart classroom" for presentations and as computer lab where each student would have easy access to a computer. Within the lab, 18 individual PC computers were placed in special tables that permit easy sign language and spoken communication. At the front of the room is a teacher workstation used to manage the instructional presentations and sharing of information between student and instructor computers. The large projection system is capable of showing student and instructor computer displays and standard television and visualizer images. Adjacent to the Multimedia Computer Lab is another room for the network server and two sophisticated computers that are used for faculty training.

The Multimedia Computer Lab was officially opened on 3 October 2001. The new lab is very popular with TUT faculty; to date, ten members of the faculty regularly teach in the classroom; covering such diverse topics as Fashion Design, Office 2000, computer programming, English and Multimedia Technology. As the TUT faculty continue their development of new curriculum materials, the use of the Multimedia Computer Lab continues to expand.

4. Future Plans

During the second year of PEN-International, another group of faculty will travel to NTID to receive training in the areas of online and distance education, 10 TUT students will visit NTID and TCT; and an ISDN videoconferencing system will be installed at TUT.

Most significantly, during the second year of the project, TUT will host a regional conference in China for educators of the deaf to begin the process of sharing the knowledge and skills acquired as a result of participation with PEN-International.

5. References

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